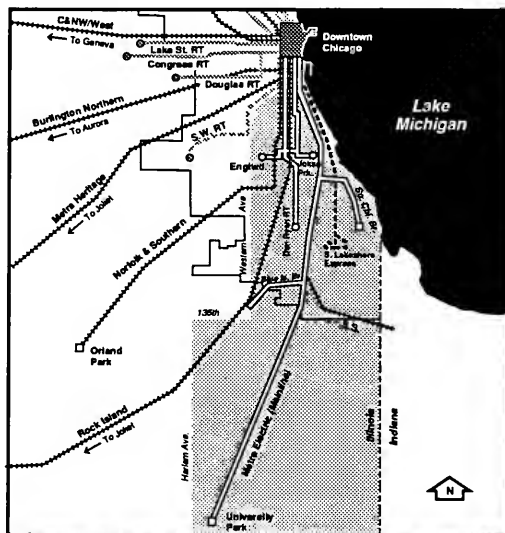


# South Corridor Study Phase 1 Report



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# **SOUTH CORRIDOR STUDY**

## **PHASE I REPORT**

Prepared By  
**MULTISYSTEMS, INC.**

In Cooperation With the  
**REGIONAL TRANSPORTATION AUTHORITY**

**SEPTEMBER 1991**

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# **1. INTRODUCTION**

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## **1.1. STUDY PURPOSE**

This study provides a comprehensive analysis of radial transit service in the corridor extending south from the Chicago Central Area. It is intended to provide a basis for recommending what major capital investments and short range options, if any, that should be made in public transportation in the South Corridor. This study examines existing and future conditions in the corridor and will evaluate a wide range of options for providing transit service for the corridor's residents and improving the efficiency of corridor transit services.

The impetus for this study came from the Regional Transportation Authority (RTA) Board of Directors, who stipulated that a productivity study should be performed of the Metra Electric services after the purchase of the Illinois Central Gulf (ICG) assets by Metra in 1987. However, due to the close proximity of transit services to one another in the corridor, it was concluded that one service could not be studied in isolation. Consequently, the study was transferred to RTA and work was initiated in spring 1989.

This corridor exhibits a high level of transit demand that is served by a variety of different transit modes, including local bus, express bus, rail rapid transit, and commuter rail. The South Lakefront Corridor is identified in the region's 2010 Transportation System Development Plan for service improvement and rationalization. The South Corridor Transit Study will detail the systems level analysis performed in the long range transportation plan by evaluating a full range of options and analyzing the complex operational and financial aspects of the corridor.

## **1.2. STUDY ORGANIZATION**

A Steering Committee, which is responsible for the conduct of the study, was formed during the initiation of the study. Its original members included the RTA, Metra, the Chicago Transit Authority (CTA), Pace, and the City of Chicago Department of Public Works. In early 1990, the City of Chicago Departments of Planning and Economic Development and the South Suburban Mayors & Managers Association were added to the Steering Committee. The Chicago Area Transportation Study (CATS) was also added to the Steering Committee in June of 1991.

The study has been divided into two phases. Phase I characterizes the existing and future travel markets in the South Corridor. The strengths and deficiencies of existing transit services in the corridor and the impacts of several major transit improvement projects currently under construction have been identified. In addition, a set of conceptual alternatives is being developed for analysis in Phase II.

Phase II of the study will detail and evaluate this set of alternatives designed to provide improved, cost-effective transit service for South Corridor residents. This evaluation will include a "fatal flaw" analysis and the development of ridership and conceptual costs (both capital costs and operating and maintenance costs), for the alternatives in order to assess their productivity, cost-effectiveness, and financial feasibility. In addition to providing this information required for the development of a long range plan of action for the corridor, short range strategies will be recommended to address existing and near term transportation problems in the corridor.

### 1.3. PHASE I ANALYSIS APPROACH

Phase I of the South Corridor Study characterized the Study Area, its major radial transit services, and their travel markets in sufficient detail so that alternative improvements can be analyzed in Phase II. The Phase I analysis included four major components.

First, market surveys were conducted to identify differences in the market groups served by each of the major radial transit services in the corridor and to understand their travel behavior. These included on-board surveys of the users of each of the primary radial services and a telephone survey of the general population. Surveys were conducted in the spring and summer of 1989.

Second, analyses of the historical trends in ridership and past and projected changes in the physical and demographic characteristics of the Study Area were conducted. Available data were obtained from existing sources on past, current, and projected physical and socioeconomic conditions. The RTA and the three service boards (Metra, CTA, and Pace) provided data on ridership and the physical and operational characteristics of the current transit system in the corridor as well as all programmed and planned transit improvements.

Third, to provide a comprehensive basis for assessing strengths and deficiencies in the services and to provide a basis for subsequent development of alternative future configurations, each of the major radial services was subjected to an evaluation of current performance. A set of evaluation criteria was devised with input from the steering committee and RTA staff. In general, criteria were limited to those that were measurable with readily available data and could be compared with existing system averages. These criteria, summarized in Exhibit 1-1, fall into the following categories:

- 1) Service Utilization
- 2) Service Quality
- 3) Social Goals
- 4) Cost/Efficiency

The various measures of performance were used to characterize the existing conditions, as reflected in the most recent data available at the time of the study.

Fourth, to examine future implications of anticipated changes in economic patterns and transit system changes now in progress, radial transit usage was forecast for the year 2010. This assumed a base transit service configuration consisting of the current services plus already programmed changes. The ridership forecast was made using models developed from the survey data and calibrated with recent ridership counts. Sensitivity analyses were performed to examine the implications of different assumptions regarding future economic development and population in the Study Area. When possible, evaluation measures were estimated considering projected future conditions. (Analysis of system performance under alternative transit service configurations will be addressed in Phase II.)

The remainder of this Phase I report details the data collected on past, current, and future conditions as well as projections of future transit usage. Historical trends and current conditions are presented in Section 2 while projections for the future are presented in Section 3.

Details of the evaluation of current performance are contained throughout these two sections and the conclusions are summarized in Section 4.

## **Exhibit 1-1**

### **Evaluation Criteria**

#### **Service Utilization**

- a. Total Line Ridership
- b. Ridership By Origin Segment/Station
- c. Ridership By Time Period
- d. Mode Share for Corridor and within Market Area
- e. Ridership By Destination

#### **Service Quality**

- a. Perceived Service Quality
- b. Crowding
- c. Convenience (Need to Transfer)
- d. Travel Times by Component for Selected OD Pairs

#### **Social Goals**

- a. Serving the Transit Dependent
- b. Environmental Impact
- c. Service to Development Areas

#### **Cost/Efficiency of Service**

- a. Overlap of Geographic Markets
- b. Ridership Per Vehicle Mile
- c. Ridership Per Vehicle Hour
- d. Operating Cost Per Rider
- e. Capital Costs (for Phase II Evaluation of Alternatives)
- f. Estimated Load Factor



## 2. EXISTING CONDITIONS

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The primary focus of Phase I of the South Corridor Study was the examination of the transit system and surrounding communities in the large corridor extending south from downtown Chicago to northern Will County. The study has documented current conditions, as well as the trends over the past twenty to thirty years that led to today's conditions. The Study has revealed that these communities have changed dramatically in recent decades, however, the transit system remains largely as it was in 1970.

### 2.1. STUDY AREA DEFINITION

The South Corridor Study Area spans more than 300 square miles, extending southward from downtown Chicago to the northern portion of Will County. The Study Area was defined so that it comprises the markets of the four major radial transit services carrying transit commuters downtown.

The primary South Corridor Study Area is bounded on the north by Roosevelt Road, on the edge of downtown Chicago, on the south by the southern border of Crete and Monee Townships, on the east by Lake Michigan and the Illinois/Indiana border, and on the west by Western Avenue and Harlem Avenue. The Study Area also includes the Chicago Central Area, which is largely coincident with the city's downtown. The Central Area has been included in the Study Area because it is the destination of most downtown-oriented trips. However, for most purposes in this report, unless otherwise noted, the term 'Study Area' refers to the area south of Roosevelt Road (See Exhibit 2-1).

The Study Area encompasses approximately 315 square miles and crosses a large number of political and community boundaries. Approximately one third of its geographic area lies within the City of Chicago, while the remainder consists of six complete suburban townships<sup>1</sup> and three municipalities within Calumet Township.<sup>2</sup>

The boundaries of the South Corridor Study Area derive from an effort to analyze transit use on lines connecting downtown Chicago and the Study Area. The Study Area is intended to include most of the market (or catchment) areas of the four major radial transit services:

- Metra Electric Commuter Rail (Main Line, So. Chicago & Blue Island branches)
- CTA Dan Ryan Rapid Transit
- CTA Englewood/Jackson Park Rapid Transit
- CTA South Lakefront Express Bus (Routes 6 and 14)

Other radial transit services (Metra Rock Island and South Shore Commuter Railroads, and Pace Lansing Express Bus Route 355) were excluded from the early stages of the study, when the on-board surveys were conducted, because these lines have minimal interaction with the

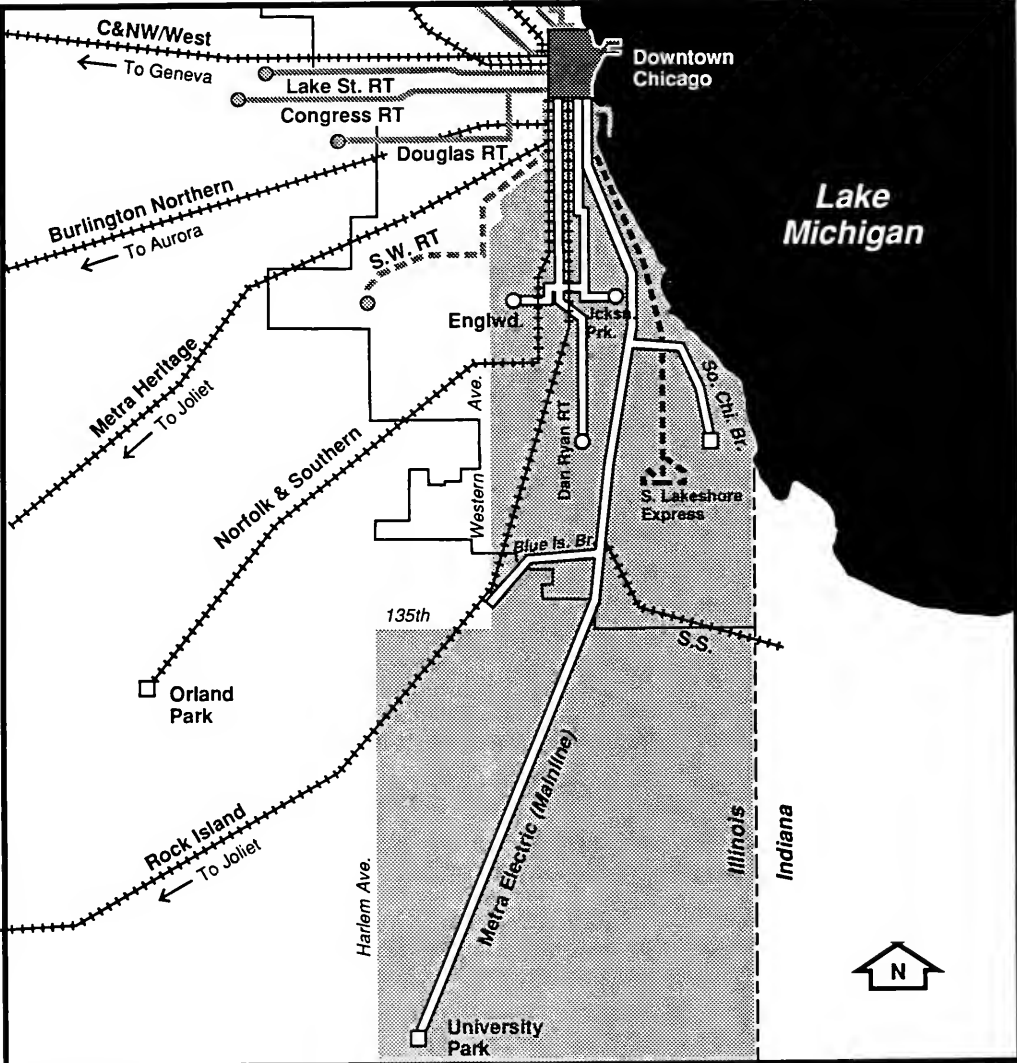
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<sup>1</sup> Bremen, Thornton, Rich, Bloom, Monee, and Crete Townships.

<sup>2</sup> Calumet Park plus the Calumet Township portions of Riverdale and Blue Island.

Exhibit 2-1

# South Corridor Study Area





service areas of the other four transit services. They have been included in this report because they provide some service within the boundaries of the Study Area. The northernmost portion of the Study Area, between Roosevelt Road and 47th Street, was also excluded from the initial data collection and was added to the Study Area after the on-board surveying was completed.

## **2.2. COMMUNITY CHARACTERISTICS**

Patterns of land use and demographics play an important role in shaping the market for transit service in the Study Area. Land use influences transit demand because the locations of homes, businesses and shops help determine the pattern of trip making in a metropolitan area. Likewise, demographics influence trip making patterns because transit ridership varies with service area populations, as well as socioeconomic characteristics. In the South Corridor, the population, which totals more than a million people, has shifted steadily southward since World War II. This has resulted in rapid development throughout much of the suburban Study Area, and a pattern of divestment in some older Chicago areas. The population shift has important implications for transit because much of the transit infrastructure is located in the portions of the Study Area which have lost population.

### **2.2.1. Land Use**

Comprehensive, up-to-date land use information for the Study Area is not readily available. Consequently, information on land use was assembled from several sources. Some of the land use features observed include:

- higher density, rental residential property is more common in the northeast and central Chicago portions of the Study Area; a major concentration of public housing units is located in the Study Area.
- higher residential vacancy rates are also more common in the northeast portion of the Study Area.
- industrial activity tends to be concentrated in areas of high access to expressways and water transportation.
- significant amounts of vacant or underutilized commercial and industrial land exists.
- several of the region's major transportation facilities and institutions are located in the study area.

#### **2.2.1.1 Residential**

Looking at residential uses, it's difficult to draw a general distinction as to the location of multi-family and single-family residential based on the available land use information. However, looking at recent U.S. Census data, some patterns do emerge. Specifically, higher densities and renter occupation rates indicate a concentration of multi-family, rental property in the northeast and central portions of the Chicago study area. Similarly, higher densities and renter

occupation rates in the closer-in suburban communities indicate the presence of multi-family, rental properties in these communities.

Within the Chicago portion of the Study Area, the total number of housing units in 1990 was almost 345,000, with approximately 39,000 or 11 percent of these units vacant.<sup>3</sup> This vacancy rate is slightly higher than the city-wide vacancy rate of 9.5 percent. Of the 305,000 units that were occupied in 1990, nearly 177,000 or 58 percent of the units were rental units, with the remaining 129,000 units or 42 percent owner-occupied. The renter rate for the Chicago portion of the Study Area is identical to the city-wide rate of 58 percent.

Community areas with high proportions of renters to total occupied units were found primarily in the northeast portion of the Study Area. Many of these community areas had rental occupation rates higher than 75 percent. Similarly, high vacancy rates, defined as greater than 20 percent, were present primarily in the northeast portion of the Study Area. The highest vacancy rates were found in the Oakland, Grand Boulevard, Washington Park and Woodlawn community areas.

Density levels are also good indicators of multi-family housing. The Chicago portion of the Study Area had a density level of approximately 9,500 persons per square mile, which is lower than the city-wide ratio of 11,600 persons per square mile. Community areas in the Study Area with the highest density levels are once again found in the northeast and central Chicago portions of the Study Area. The community areas of Grand Boulevard, West Englewood, Englewood, South Shore and Auburn Gresham had the highest densities within the Study Area (approximately 16,000+ persons per square mile).

Nearly two-thirds of the Chicago Housing Authority's total residential rental units are located within the boundaries of the Chicago portion of the Study Area. Major concentrations of public housing units include: 3,500 units in the vicinity of Roosevelt and Ashland Streets; 4,300 units located between 39th and 54th Streets at State Street; 2,300 units located between 20th and 30th Streets at State Street; 1,600 units between 35th and 39th Streets at State Street; nearly 2,500 in the vicinity of 39th Street and Martin Luther King Drive; and about 1,000 units situated between 39th and 43rd Streets at the lakefront.

In general, municipalities in the suburban portion of the Study Area are characterized by lower densities, fewer renters and lower housing vacancy rates than the Chicago portion of the Study Area. The density ratio for the entire suburban portion of the Study Area was approximately 3,500 persons per square mile. Closer-in suburban communities, such as Harvey, Blue Island, Dolton, Oak Lawn, Midlothian and Calumet City, have the highest density ratios (4,500+ persons per square mile) of the suburban portion of the Study Area. Of the further out communities, only Park Forest and Steger have similar density levels.

The renter occupation rate for the suburban portion of the Study Area is approximately 27 percent. The highest renter occupation rates in the suburban portion of the Study Area were in the 40 percent range. Communities with renter occupancy rates greater than 40 percent included the closer-in communities of Blue Island, Riverdale, Harvey, Robbins and East Hazel Crest. Of the further out communities, only University Park had a renter occupation rate greater than 40 percent. The housing vacancy rate for the entire suburban portion of the Study Area averaged 4.75 percent. The typical vacancy rate was in the range 5-7 percent, with the exception of the City of Harvey which had an 11 percent housing vacancy rate.

---

<sup>3</sup> Both 1990 housing unit and population census data for the City of Chicago are being challenged in pending litigation. See Section 2.2.2.1.

### *2.2.1.2 Commercial, Industrial and Transportation*

Land use information related to industrial and commercial uses was compiled from a variety of sources, with information for the Chicago portion of the Study Area more readily available than for the suburban areas. Major shopping centers which are located in the Study Area, defined as those of more than 200,000 square feet, are identified in Exhibit 2-3. Industrial corridors which are in the Chicago portion of the Study Area are identified in Exhibit 2-4. Not surprisingly, industrial corridors are concentrated primarily along the railroads, expressways and the waterways -- the Chicago River, the Sanitary and Ship Canal, the Calumet River and Lake Calumet.

Much of the land use in the Study Area is consumed by major transportation facilities with the presence of many freight rail lines and yards, at least six major expressway routes and the Port of Chicago at Lake Calumet.

### *2.2.1.3 Schools, Hospitals and Institutional*

The location of cultural, educational and health institutions is summarized in Exhibit 2-3. The City's major cultural institutions, including the Museum of Natural History, the Shedd Aquarium and the Adler Planetarium are located in the extreme northeast portion of the near-in Study Area (at approximately 1200 south and the lakefront). Another concentration of major cultural facilities is found near the Museum of Science and Industry at 57th Street and the lakefront.

The Hyde Park area has one of the few concentrations of health/educational institutional activities in the Study Area with the presence of the University of Chicago complex and other institutions located nearby. A similar concentration of institutional activity appears around the Illinois Institute of Technology, at approximately 35th and State Streets, and around the Kennedy-King City College at 68th Street and Wentworth Avenue.

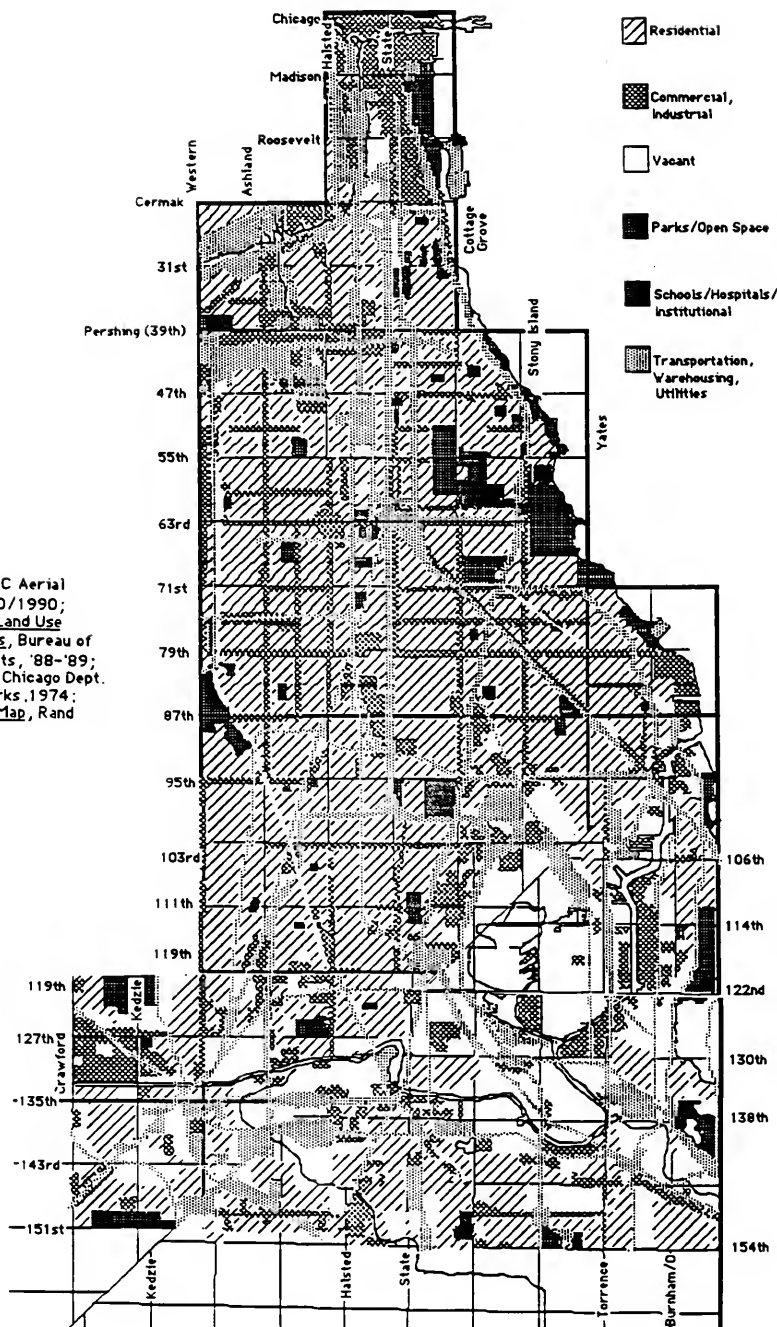
Some of the major educational institutions located in the Study Area include: the Illinois Institute of Technology, the University of Chicago, Chicago State University, Governors State University and several community colleges. Major health institutions situated in the Study Area include: Michael Reese Hospital, Mercy Hospital, St. Francis Hospital, St. James Hospital, the Cook County Oak Forest facility and several community hospitals.

### *2.2.1.4 Parks and Open Space*

Parkland in the Chicago portion of the Study Area is concentrated along the lakefront north of 67th Street and Washington Park, situated between Cottage Grove and King Drive and 51st and 60th Streets. In the suburban portion of the Study Area, Forest Preserves are located at the intersection of Interstates 94 and 80, along Thorn Creek, along the Little Calumet River, near the intersection of Interstates 57 and 80, and in northwestern Bremen Township.

Exhibit 2-2 shows generalized 1990 land use in the Study Area.

## South Corridor Land Use







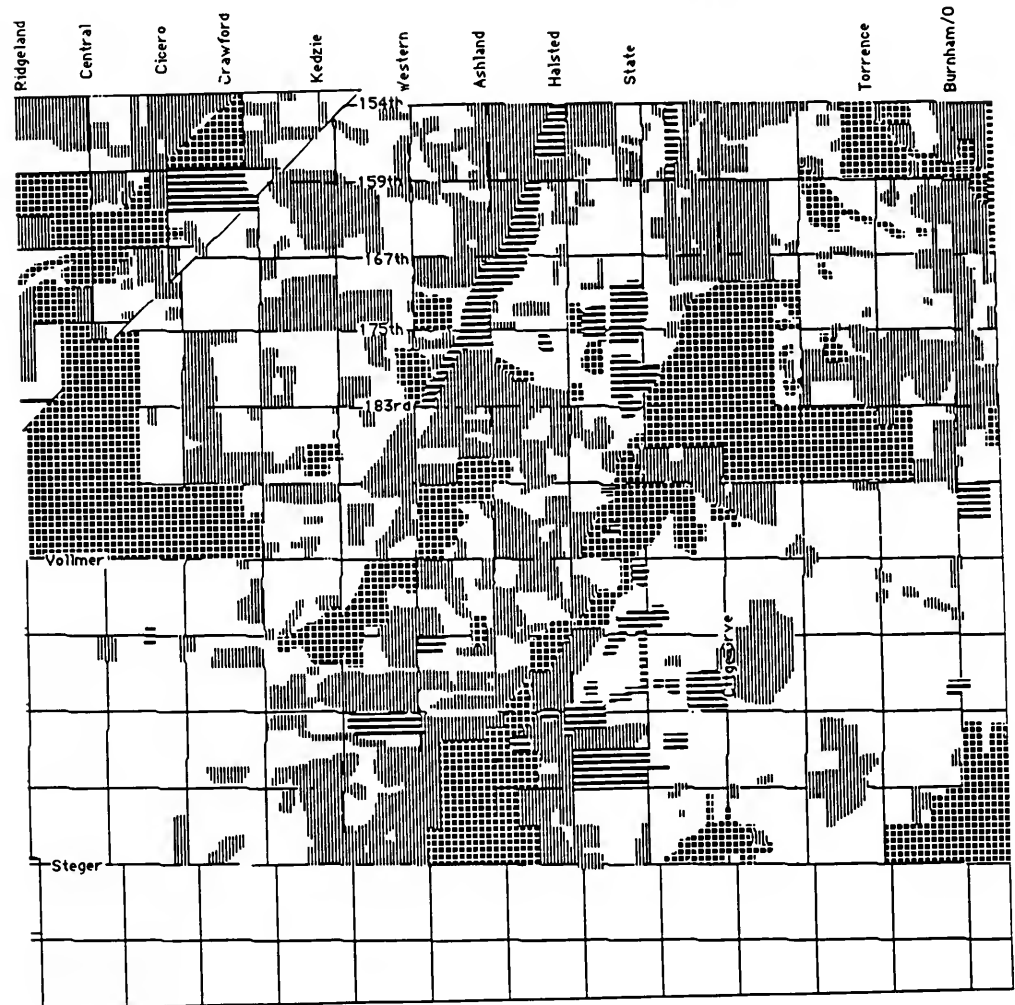
Sources: NIPCA Aerial  
Photos, 3/20/1990;  
Generalized Land Use  
Chicago Atlas, Bureau of  
Maps and Plats, '88-'89;  
Map, City of Chicago Dept.  
of Public Works, 1974;  
Chicagoland Map, Rand  
McNally

# Exhibit 2-2 (cont.)

## South Corridor Land Use

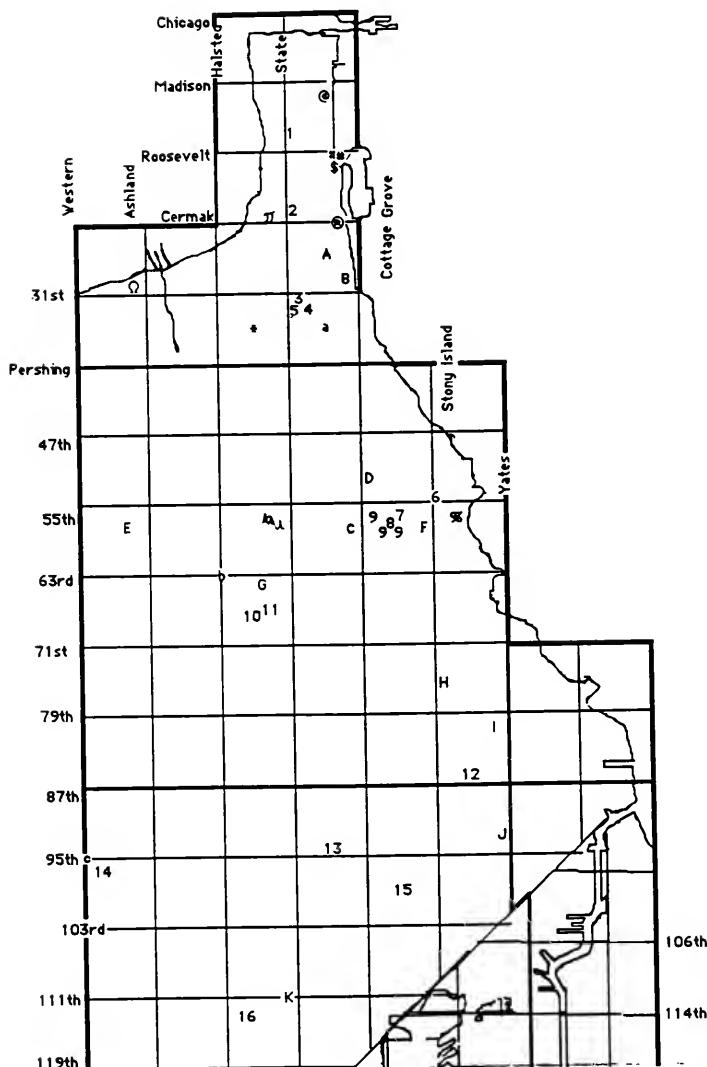
Source: Chicagoland Map, Rand McNally  
and Chicago Tribune, 1991

-  Residential, Commercial
-  Industrial
-  Parks, Forests, Cemeteries, Clubs
-  Vacant



# Exhibit 2-3

## South Corridor Major Activity Centers



- 1: East-West University
- 2: Chicago Technical College
- 3: Vandercook College of Music
- 4: Ill. College of Optometry
- 5: Ill. Institute of Technology
- 6: Catholic Theological Union at Chicago
- 7: Meadville Lombard Theological School
- 8: Chicago Theo. Seminary
- 9: U. of Chicago
- 10: Wilson jr. College
- 11: Kennedy-King City College
- 12: Chicago voc. h.s. & S.E. jr. College
- 13: Chicago State U.
- 14: Bradley U.
- 15: Olive Harvey City College
- 16: Chicago jr. College (Fenger)
- 17: South Suburban College
- 18: Thornton comm. College
- 19: Prairie St. College
- 20: Governors St. U.

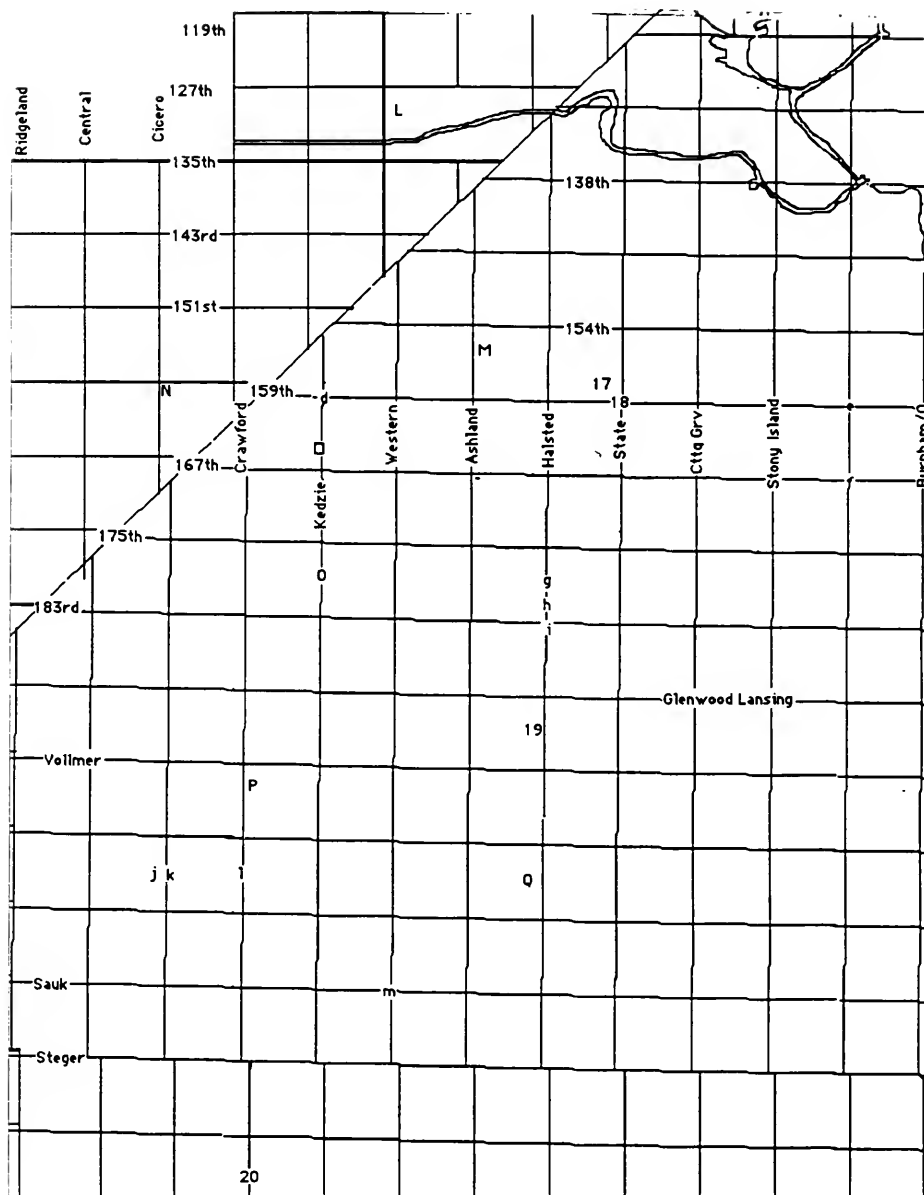
- A: Mercy hospital  
 B: Michael Reese hosp.  
 C: Chicago hosp.  
 D: Chicago Osteopathic hosp.  
 E: Central comm. hosp.  
 F: Hyde Park comm. hosp.  
 G: St. Bernard's hosp.  
 H: Jackson Park hosp.  
 I: South Shore hosp.  
 J: South Chgo. comm. hosp.  
 K: Roseland comm. hosp.  
 L: St. Francis hosp.  
 M: Ingalls Mem. hosp.  
 N: Cook County Oak Forest hosp.  
 O: South Suburban hosp.  
 P: Olympic Fields hosp.  
 Q: St. James hosp.

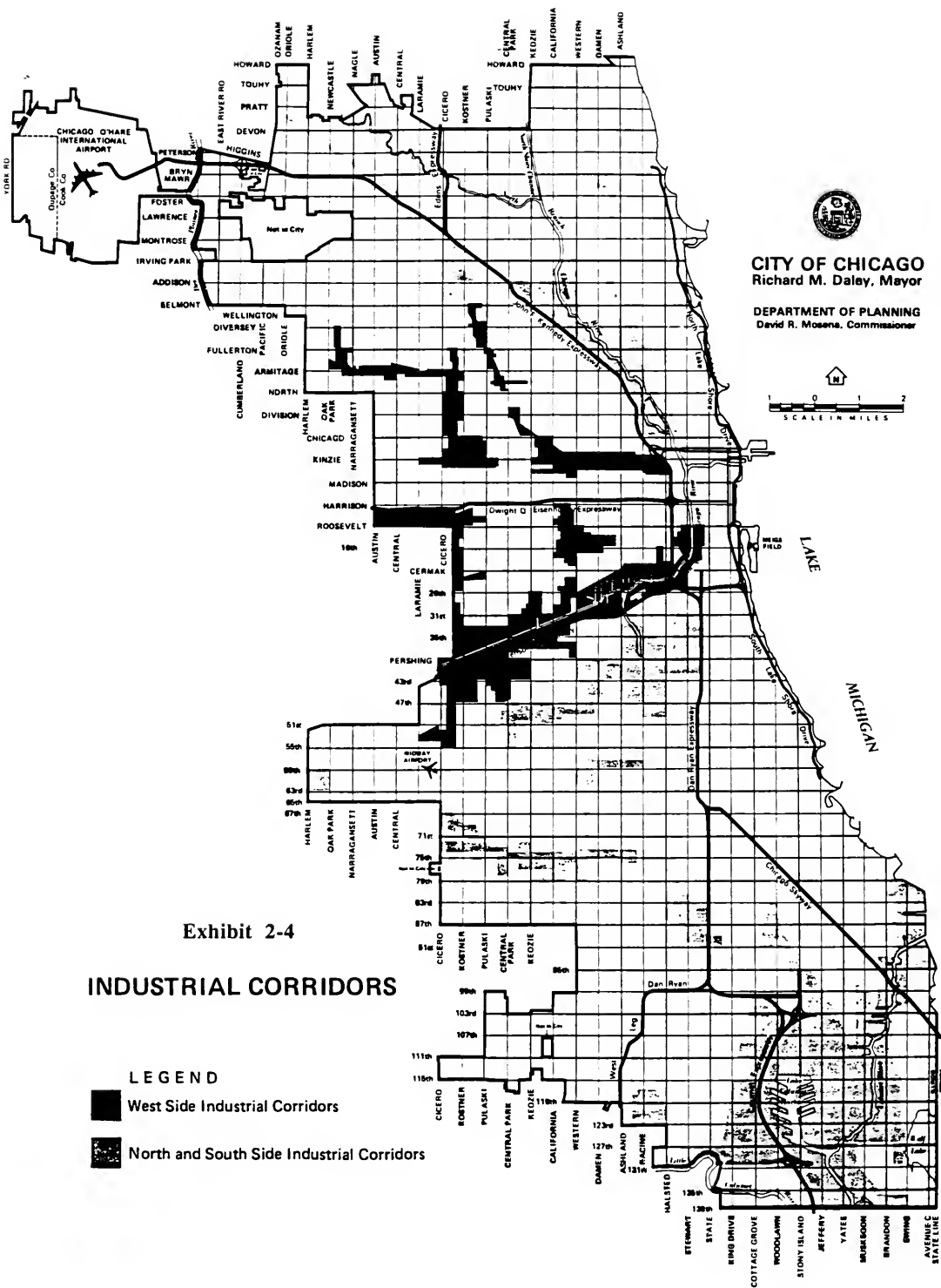
- a: Lake Meadow shp. ctr. (228 thou. sq. ft.)  
 b: Englewood s.c. (1175)  
 c: Evergreen Plaza s.c. (1200)  
 d: Canterbury s.c. (302)  
 e: River Oaks s.c. (1400)  
 f: Landings s.c. (578)  
 g: Washington Square Mall (415)  
 h: Washington Park Plaza s.c. (228)  
 i: Glenwood Plaza s.c. (253)  
 j: Leohmann's Plaza s.c. (250)  
 k: Lincoln Mall (1200)  
 l: Marketplace of Matteson (285)  
 m: The Centre s.c. (700)

- @: Art Institute of Chicago  
 •: Adler Planetarium, Field Museum, Shedd Aquarium & Oceanarium  
 \$: Soldier's Field  
 π: Chinatown  
 ⊙: McCormick Place  
 Q: Proposed location of future produce market  
 \*: Comiskey Park  
 %: Museum of Science and Industry  
 □: Cook County Court Facility

# Exhibit 2-3 (cont.)

## South Corridor Major Activity Centers







### Exhibit 2-4

## INDUSTRIAL CORRIDORS

## LEGEND

-  West Side Industrial Corridors
-  North and South Side Industrial Corridors



### **2.2.2. Demographic Characteristics**

Looking at demographic trends in the Study Area over the last several decades, one finds several forces at work. These include:

- a shift of the center of population southward, as population losses in the northern Study Area have dramatically lowered its population, while growth occurred in the suburban area. Declining population, without commensurate increases in labor force participation, can make it difficult to sustain existing transit ridership levels.
- the southward population shift occurred while the total Study Area population remained constant, until the last decade, when reversal of suburban population growth led to Study Area population decline.
- a stabilization of the trend toward black residents supplanting white ones in the Chicago portion of the Study Area, as the black population declined for the first time in the 20th century.
- the concentration of low-income people in some Study Area communities. High poverty rates pose a challenge to the existing transit system because low-income riders own fewer autos than the average, hence are more dependent on transit than most people, yet at the same time, are very cost sensitive.

Wherever possible, 1990 census data has been used in analysis of Study Area demographic trends. However, since 1990 data is not yet available for many information categories, 1980 census data has been used in some cases, where noted.

#### **2.2.2.1 Population**

Newly released 1990 census information shows that virtually all portions of the Study Area lost population during the 1980's, with the total shrinking from 1.54 million to 1.36 million<sup>4</sup>, a decline of 11.7 percent. Within the City of Chicago all 32 Study Area communities lost population, with declines exceeding 25 percent taking place in several of them (See Exhibit 2-5). The only growth occurred in suburban Rich and Crete townships, which together gained about 4,000 residents, an increase of five percent.

The U.S. Census Bureau's Post Enumeration Survey shows that there was an undercount in the 1990 Census. In pending litigation, the City of Chicago has challenged the 1990 Census figures as undercounts. Evidence compiled by the City shows that on the South Side, particularly in communities which are heavily African-American, low income, and/or contain concentrations of public housing, the 1990 Census undercount exceeds 10 percent and could be as high as 25 percent.

---

<sup>4</sup> Exclusive of Riverdale, Calumet Park, and Blue Island.

The recent population losses cap 30 years of declines in the portion of the Study Area north of 79th Street, with a more than 40 percent loss in population since 1960. Among the biggest population losses during the past several decades have taken place in the community areas ringing the Hyde Park neighborhood. In these communities, declines have exceeded 50 percent since 1960, as Exhibit 2-6 shows, while during the 1980's alone, all but one experienced greater than 25 percent population declines. Communities located between 79th and 138th have generally fared somewhat better in retaining population over the last 30 years. Exhibit 2-6 shows that none of these community areas have experienced population declines of greater than 25 percent over the past three decades, and some have experienced mild growth. During the 1970's especially, most of these southern community areas gained population.

Like the southern tier of Chicago community areas, the south suburban townships saw previous decades' growth reverse itself somewhat in the 1980's. Between 1960 and 1980, the six suburban townships grew by 56 percent to 492,000, while in the last decade they lost four percent of their population, totalling 19,500 residents. Rich and Crete townships, located in the southernmost portion of the suburban Study Area, did experience modest growth, as agricultural land continued to be adapted to residential and commercial uses. They comprise the only portion the Study Area to gain population in the 1980's.

An important consequence of relatively greater population losses in the northern portion of the Study Area has been the southward shift of the Study Area's population center. In 1960, 53 percent of the Study Area's population lived north of 79th Street, while only 20 percent lived in the suburbs, south of 138th Street. By 1990, only 36 percent of Study Area residents lived north of 79th Street, while more than 34 percent lived south of 138th. The shift of population center holds special significance for the design of transit services, because it helps to explain the long-term ridership decline on some of the nearer-in South Corridor transit services.

#### *2.2.2.2 Age Distribution*

The 1980 census indicated that the Study Area had fewer elderly residents and more young ones than northeastern Illinois as a whole. Only 8.8 percent of Study Area residents in Chicago and 8.6 percent in the suburbs were age 65 or older in 1980, while throughout the metropolitan area, the average was 10 percent (see Exhibit 2-7). By contrast, 38.6 percent of residents in the Chicago communities and 34.1 percent in the suburban townships were under age 20 in 1980, compared to 32.2 percent region-wide. In 13 Chicago community areas, most of them among the Study Area's poorest, the fraction of residents under age 20 exceeded 40 percent. (See Exhibit 2-8)

#### *2.2.2.3 Racial and Ethnic Groups*

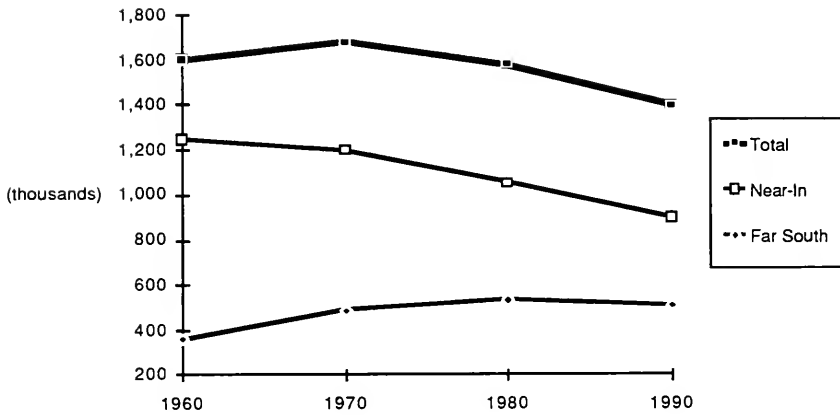
The communities comprising the South Corridor Study Area have very different racial and ethnic compositions. The suburban portion of the Study Area has a predominantly white population, while the Chicago portion has a predominantly non-white one. In total, non-white residents make up approximately 85 percent of the population in the Chicago portion of the Study Area, according to the 1990 census. The census also revealed that 79 percent of residents in the Chicago Study Area identify themselves as black, while 7 percent identify themselves as Hispanic.<sup>5</sup> Non-whites comprise more than 95 percent of the population in 16

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<sup>5</sup> Hispanics include persons of both white and black racial groups.

## Exhibit 2-5

### SOUTH CORRIDOR POPULATION TRENDS



## Exhibit 2-6

### POPULATION CHANGES (CHICAGO PORTION): 1960-1990

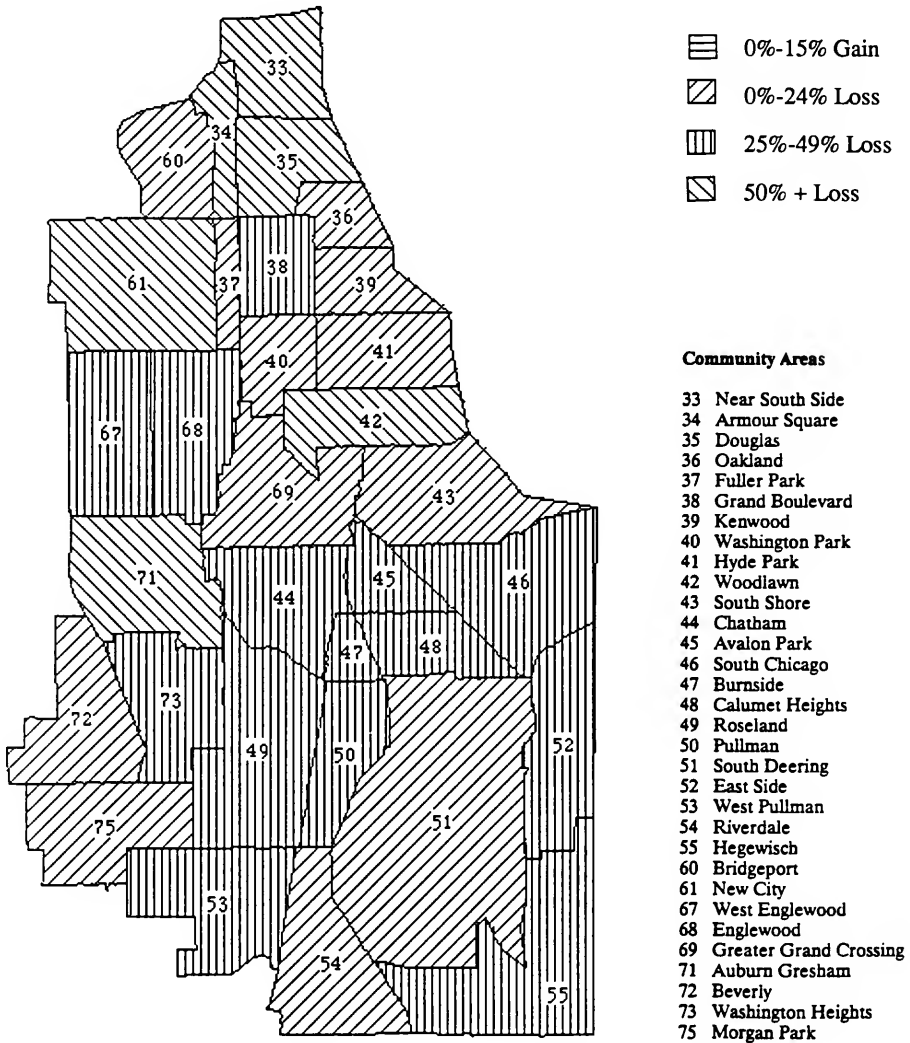
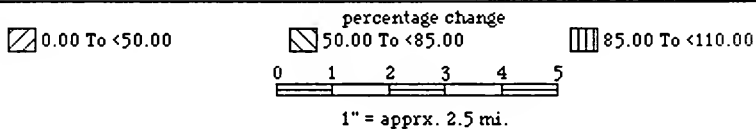
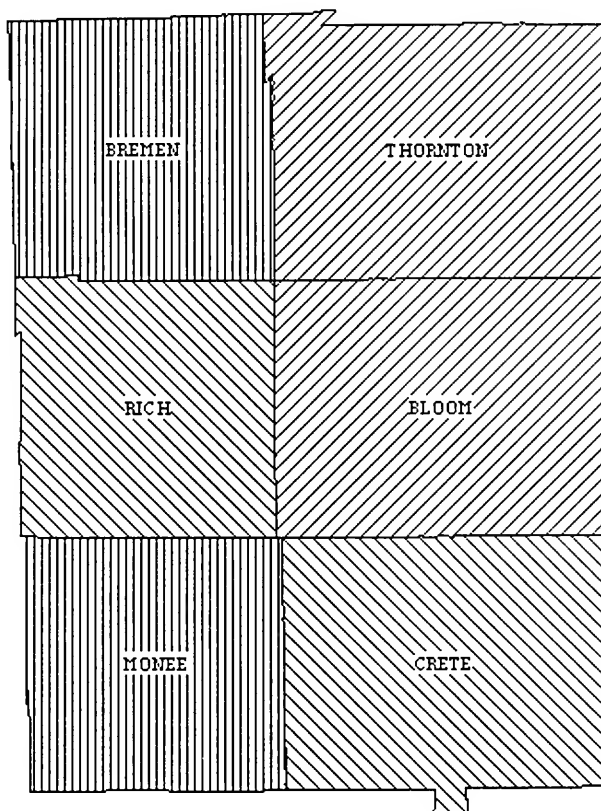


Exhibit 2-6 (cont.)

SOUTH SUBURBS: POPULATION CHANGE DURING 1960-1990



of the Chicago community areas, and more than 98 percent in 11 (see Exhibit 2-9). Predominantly white populations exist in only four Chicago Study Area communities, Hegewisch, East Side, Beverly, and Bridgeport. Hyde Park stands alone in the Chicago portion of the Study Area as a community with whites comprising about half of its population.

Taking a historical perspective on racial composition of the Chicago portion of the Study Area, one discovers that, in the 1980's, growth in the South Side's minority population stabilized after decades of dramatic increase. During the last decade, in the Chicago portion of the Study Area, non-white population decreased by 12 percent, while total population decreased by 15 percent. As a few whites continued to leave the area, the black population also declined, by 13.5 percent, while the Hispanic population increased slightly, by 1.3 percent. In contrast, in Chicago as a whole, the number of blacks has declined by 10.2 percent between 1980 and 1990, while the number of Hispanic residents has increased by 29.3 percent.

Levelling off of minority population growth has occurred after two decades during which the non-white proportion increased from 45 percent to 85 percent in the Chicago portion of the Study Area. However, this population trend has not been uniform across the Study Area. Since 1960, much of the Chicago portion of the Study Area south of 79th Street has changed from largely white to largely black, as the non-white percentage grew from 16 percent in 1960 to 60 percent in 1990. The northern communities in the Study Area, by contrast, have been populated chiefly by black residents generally since World War II, when a large in-migration occurred.

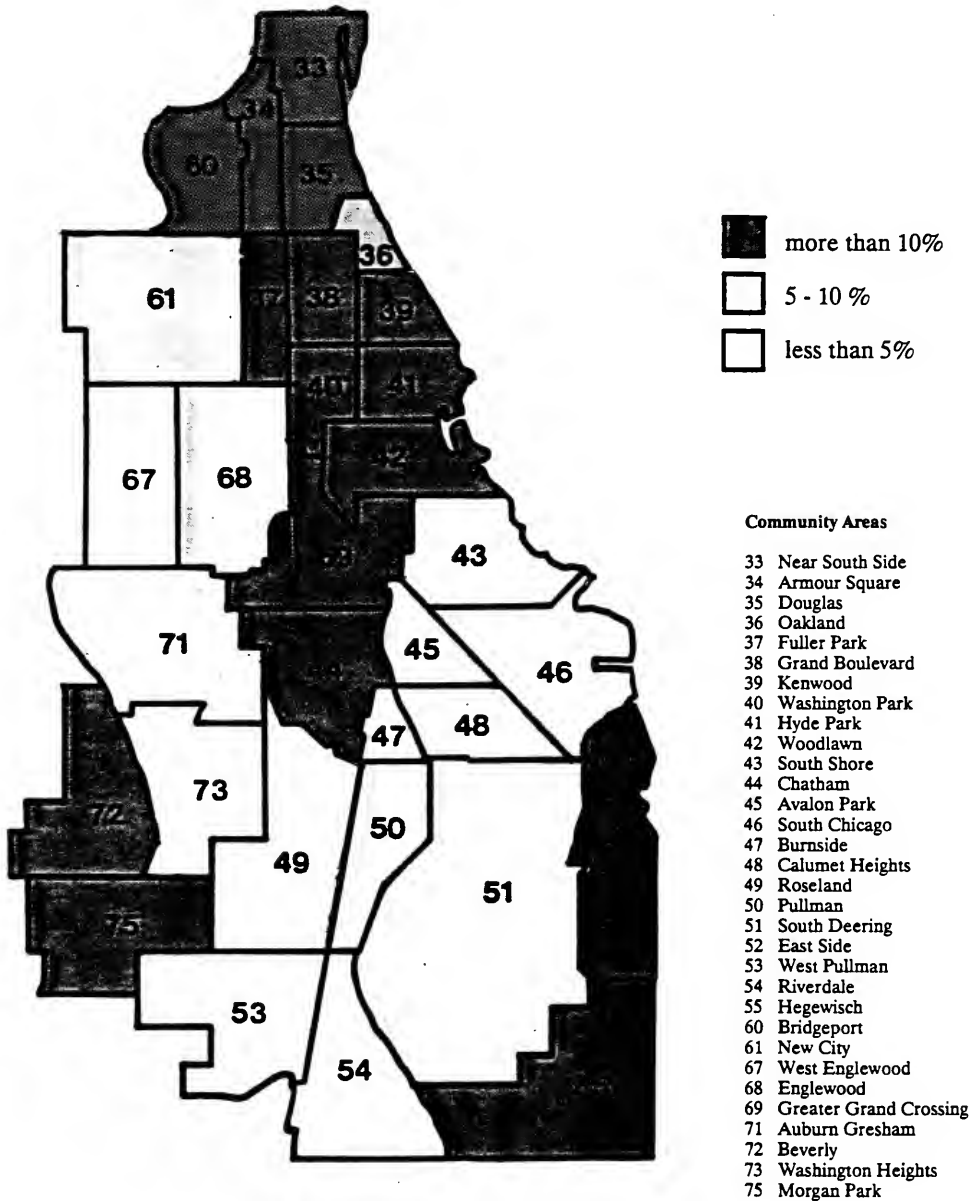
In the suburban portion of the Study Area, by contrast, whites make up approximately 70 percent of the population, though that figure has declined from approximately 80 percent in 1980. In eight of 33 municipalities located in the six suburban townships, the non-white population exceeds 50 percent, and in five of them, it exceeds 75 percent (see Exhibit 2-9). Almost all non-white suburban residents are black, with Hispanics comprising more than 10 percent of the population only in Chicago Heights and South Chicago Heights.

Since 1980, the racial and ethnic characteristics in the south suburban area have changed, becoming increasingly diverse, presumably reflecting southward migration and suburbanization of the minority population of the city's South Side. Nevertheless, the increase in the black population in the South Suburban area is only about 10 percent of the decrease in the city portion of the study area, indicating that the black population from the city portion is largely migrating elsewhere.

While the total population in the six suburban townships declined by 4 percent, the black population increased by 60 percent and the Hispanic population increased by 29 percent. As a result, blacks now constitute 28 percent of the population, up from 17 percent in 1980. Hispanics account for 4.7 percent of the population, up from 3.5 percent. When these are compared with Northeast Illinois as a whole where blacks are 19.6 percent of the population and Hispanics are 11.5 percent, it is evident that blacks are especially well represented in the south suburbs while Hispanics still have a relatively small presence.

The distribution of the minority population among the south suburban municipalities is still rather uneven, however, a number of municipalities have become more integrated. For example, six municipalities whose population was less than 10 percent black in 1980 are now more than 20 percent black. At the same time, only one relatively integrated community is now primarily (over 75 percent) black. Overall, 15 municipalities of a total of 36 now have black populations between 10 percent and 50 percent compared to only 7 in 1980.

## PERCENTAGE OF RESIDENTS AGE 65 OR OLDER



## PERCENTAGE OF RESIDENTS AGE 20 OR UNDER

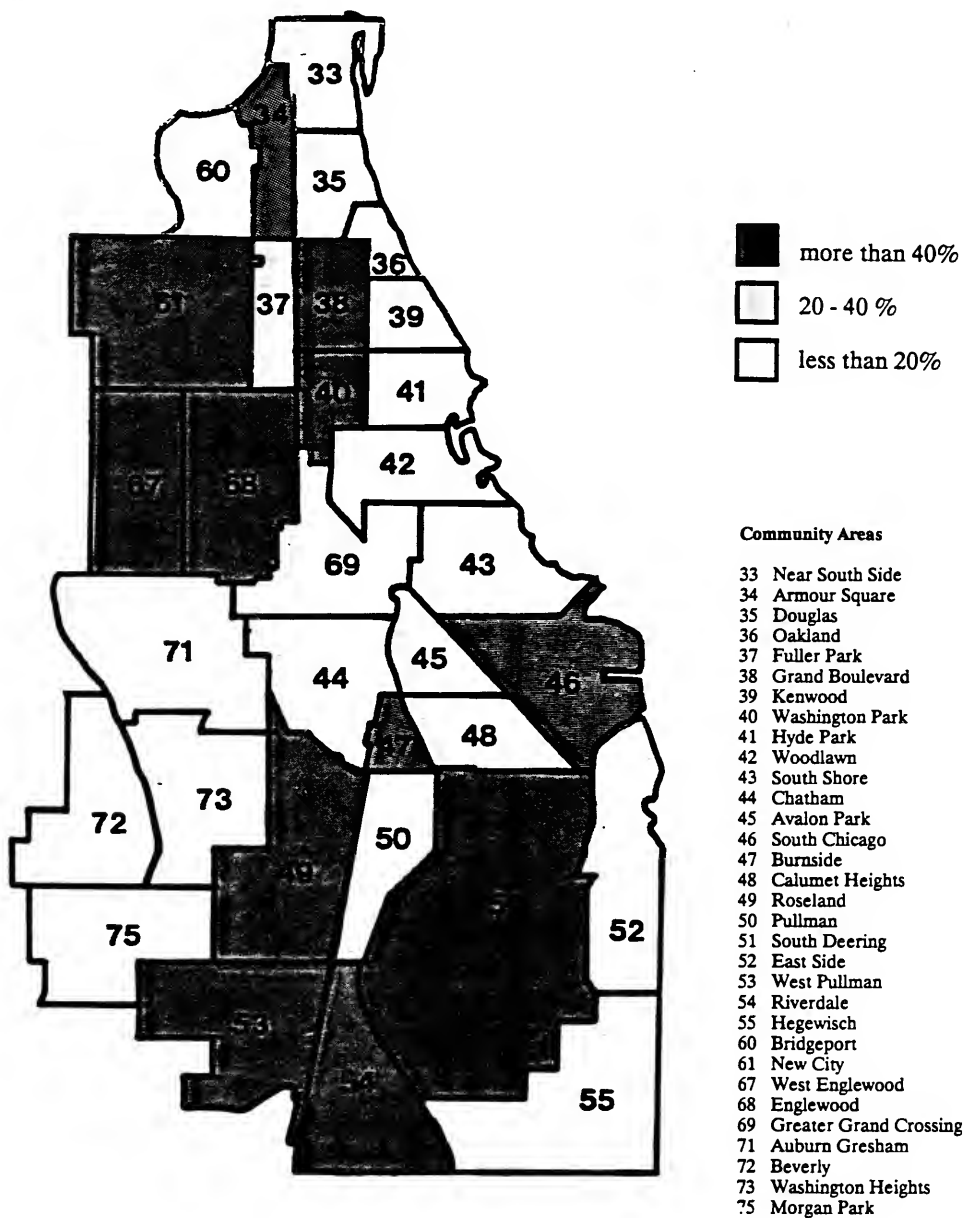
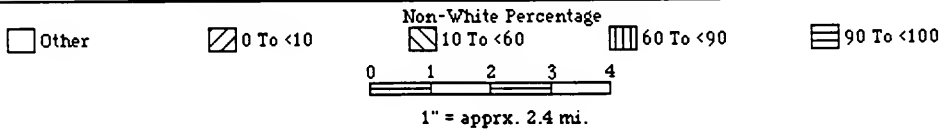
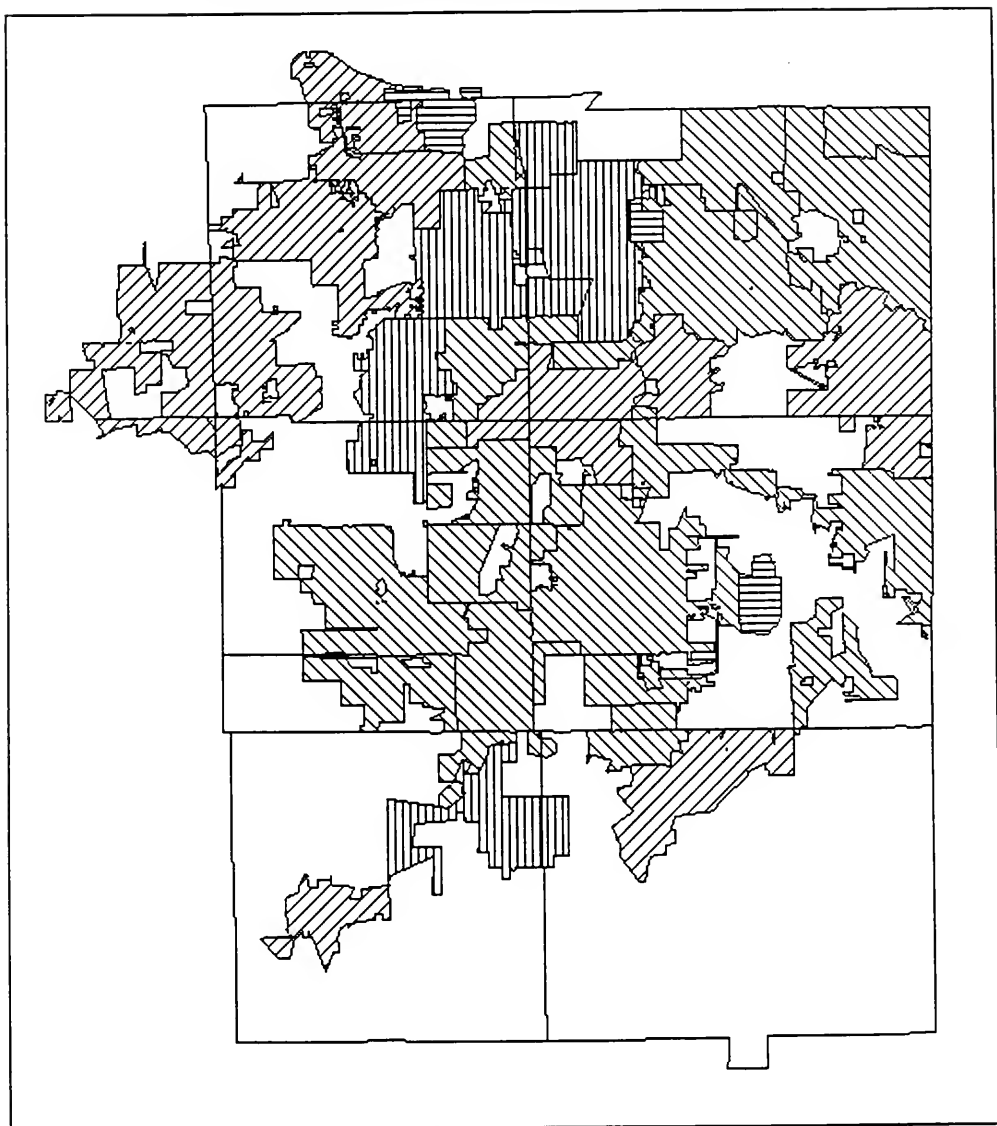




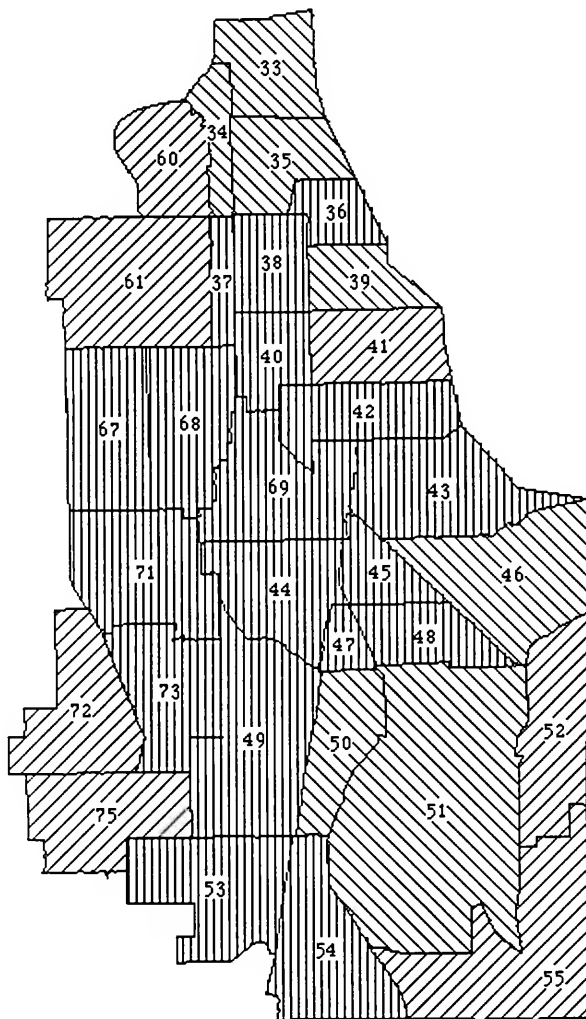
Exhibit 2-9

SOUTH SUBURBS: NON-WHITE POPULATION IN 1990



# Exhibit 2-9 (cont.)

## CHICAGO PORTION: NON-WHITE POPULATION IN 1990



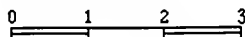
### Community Areas

- 33 Near South Side
- 34 Armour Square
- 35 Douglas
- 36 Oakland
- 37 Fuller Park
- 38 Grand Boulevard
- 39 Kenwood
- 40 Washington Park
- 41 Hyde Park
- 42 Woodlawn
- 43 South Shore
- 44 Chatham
- 45 Avalon Park
- 46 South Chicago
- 47 Burnside
- 48 Calumet Heights
- 49 Roseland
- 50 Pullman
- 51 South Deering
- 52 East Side
- 53 West Pullman
- 54 Riverdale
- 55 Hegewisch
- 60 Bridgeport
- 61 New City
- 67 West Englewood
- 68 Englewood
- 69 Greater Grand Crossing
- 71 Auburn Gresham
- 72 Beverly
- 73 Washington Heights
- 75 Morgan Park

0.00 To <75.00

Non-White Percentage  
75.00 To <95.00

95.00 To <100.00



1" = approx. 1.9 mi.

#### *2.2.2.4 Income*

The Study Area has a higher poverty rate than the average for the Chicago metropolitan area, though important distinctions can be made between some very low-income Chicago communities, and relatively well-off communities located both in Chicago and the suburban portions of the Study Area. While 1990 census data on income is not yet available, 1980 data indicates that, among all Study Area families, 17 percent had incomes below the poverty level, in comparison to only eleven percent of families throughout Northeastern Illinois. These low-income families are more common in the city portion of the Study Area than city-wide, comprising 22 percent of Study Area families in Chicago versus a city-wide average of 17 percent. By contrast, only seven percent of suburban Study Area families are similarly low-income (see Exhibit 2-10).

Within Chicago, striking variation existed in the poverty rate among Study Area communities, according to the 1980 census. Exhibit 2-10 shows that, in each of nine Study Area communities, more than 30 percent of families had incomes below the poverty level. In six of those communities (all but one of which are concentrated in the northeast corner of the study area), the figure was more than 40 percent. Oakland had a poverty rate of more than 60 percent, and Grand Boulevard had more than 50 percent of families living in poverty. At the other end of the scale, 10 percent or fewer families were below the poverty level in each of nine communities; Beverly had the lowest figure, at 2.7 percent, and Hegewisch was also below 5 percent.

Diversity also exists in the 1980 poverty rates for communities in the six suburban townships. Though the average poverty rate for the whole area is only seven percent, 10 of the 33 municipalities exceed that average, and three have poverty rates above 25 percent. (see Exhibit 2-10).

## PERCENTAGE OF FAMILIES WITH INCOMES BELOW THE POVERTY LEVEL

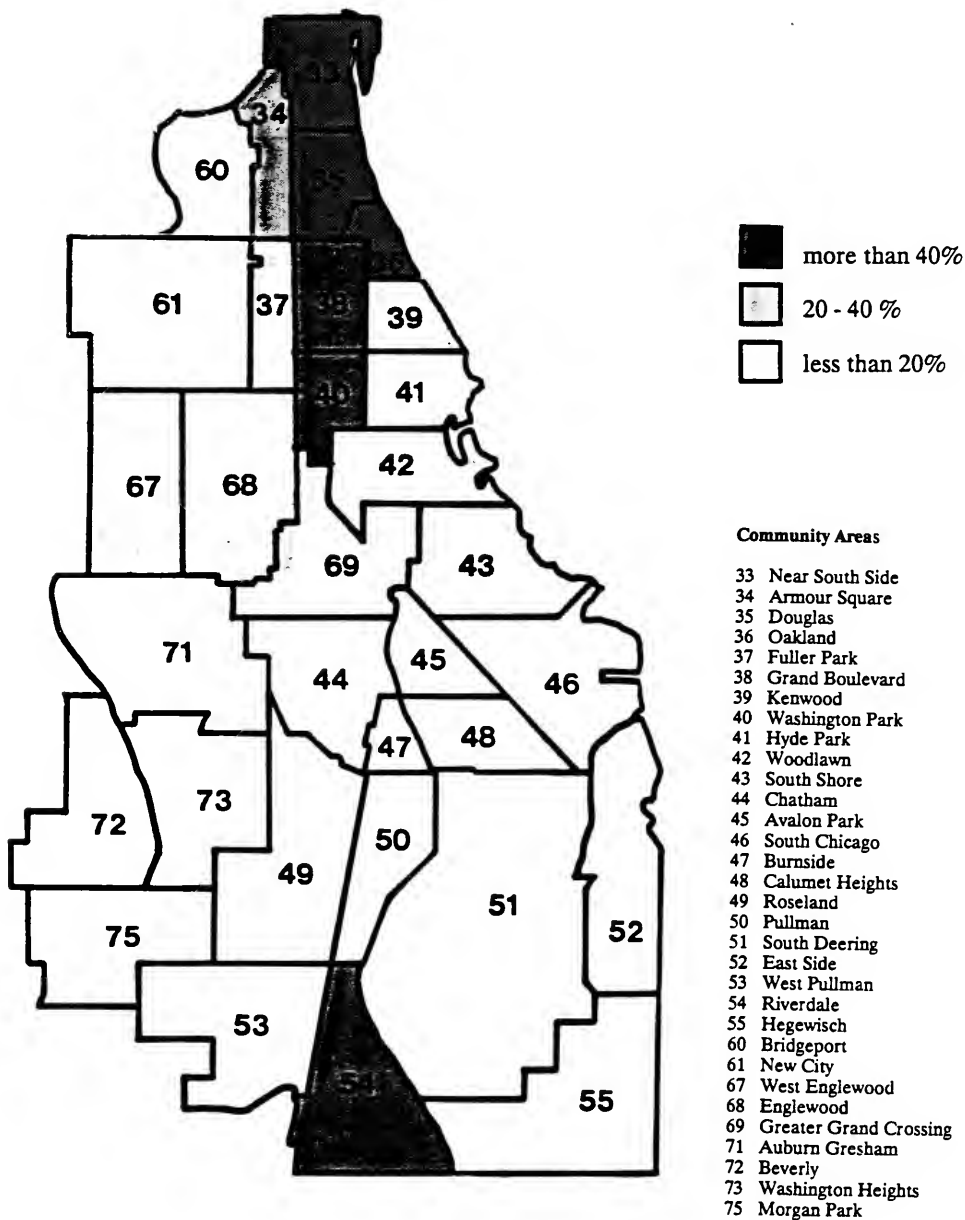
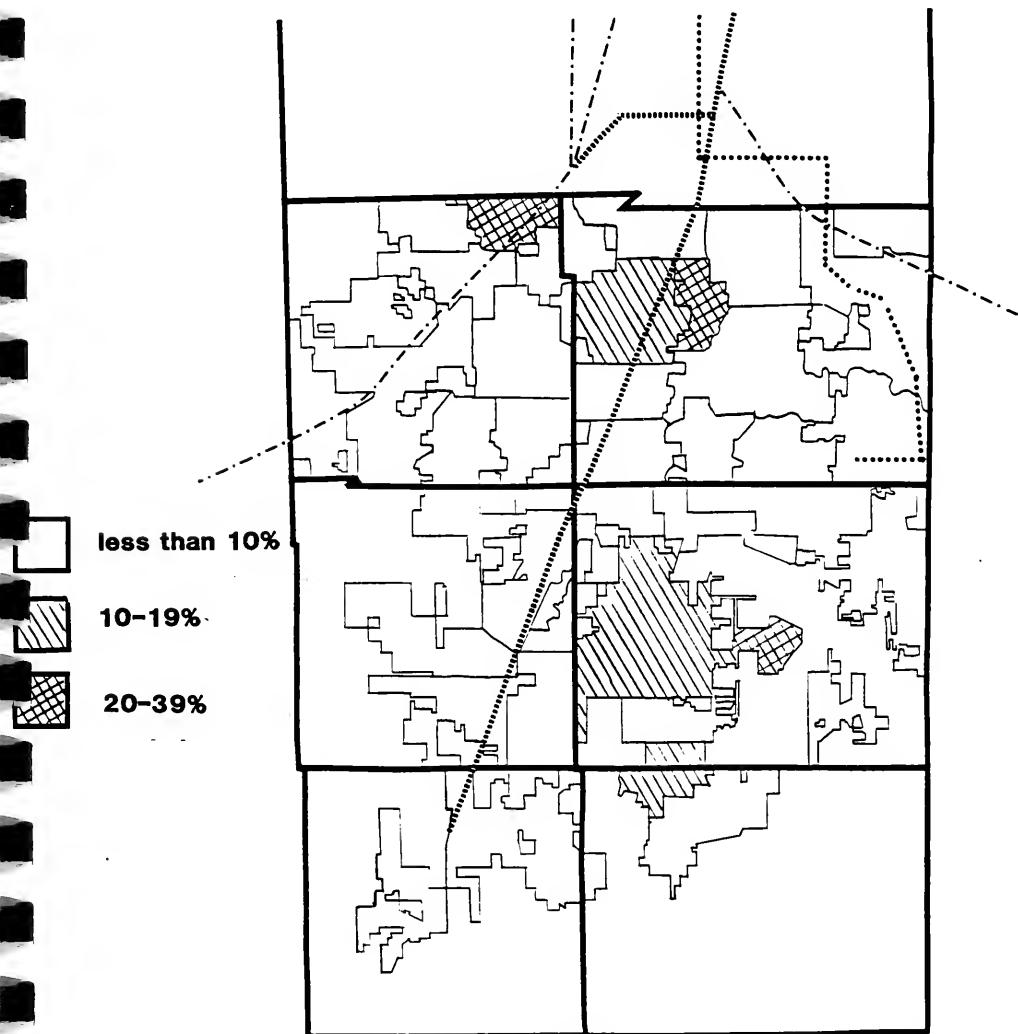


Exhibit 2-10 (cont.)

DEMOGRAPHICS OF THE FAR SOUTH STUDY AREA

PERCENT OF POPULATION BELOW THE POVERTY LEVEL (1980)



## 2.3. EXISTING TRANSPORTATION SYSTEM

The supply and quality of service offered generally play a major role in determining market for transit. In the Study Area, an extensive transit system exists, including more than 50 local and express bus routes, three commuter rail lines, and two rapid transit lines, with services operated by all three regional service boards. The South Corridor Study focuses on four major radial transit services, each of which possesses distinctive physical and operational characteristics as well as providing different levels of service quality for the users and different environmental impacts on the community.

### 2.3.1. Radial Services Operated

The physical characteristics and service levels of Study Area transit services play a major role in determining how the radial transit market is divided. The following section describes those characteristics for each of the Study Area transit services to downtown Chicago, concentrating on the primary transit services in the Study Area: the Metra Electric Commuter Railroad, the Dan Ryan and Englewood/Jackson Park rapid transit lines, and Routes 6 and 14 of the Lake Shore Express Bus service. Other radial transit services, which play a smaller role in the Study Area, are also discussed.

#### 2.3.1.1 *Metra Electric Commuter Rail*

Metra Electric Railroad (formerly Illinois Central/Gulf) provides most of the commuter rail service in the Study Area. As Exhibit 2-1 shows, the Metra Electric railroad consists of a Main Line and two branches, which have existed since the 19th century. The railroad's Main Line originates at Randolph Street Station in the Chicago Loop, travels southwest through the Study Area on an embankment, and terminates at University Park station, more than 40 miles to the south. The railroad's eastern branch, known as the South Chicago Branch, diverges from the Main Line at 71st Street and runs along a street median until its terminus at 91st Street in South Chicago. Metra Electric's western branch, known as the Blue Island Branch, diverges from the Main Line at 120th Street and runs southwest, terminating at Blue Island Station. Express service from University Park and local service from Blue Island both offer a 50 minute trip to Randolph St. Terminal in downtown Chicago, while South Chicago trains make the trip in 37 minutes.

Travelling from Metra Electric's downtown terminal to University Park, one finds the stations spaced increasingly far apart. Within the cities of Chicago and Blue Island, Metra Electric's 36 stations are found at approximately half mile intervals, both on the Main Line and the branches. On the remainder of the line, the Electric's twelve stations lie at an average interval of 1.16 miles.

Level of service and fare also vary by distance from downtown Chicago and branch of the Metra Electric. On the suburban Main Line 37 inbound trains are operated daily but, in peak periods, trains are zoned so that passengers at any one station are offered 27 to 28 weekday trains. Peak headways at each suburban station average 15 to 20 minutes. The Blue Island Branch offers 24 weekday trains to downtown, while the South Chicago branch offers 26, with peak headways of 20 minutes. Some Main Line stations within the City of Chicago

receive somewhat more frequent service, with 59 weekday inbound trains at 59th Street, slightly fewer at other Hyde Park stations, and 44 at 115th Street. Most other Chicago stops are served only by Blue Island trains or South Chicago trains and thus receive 24 to 26 trains daily. Peak headways arriving at Randolph station downtown are as low as 5 minutes. One-way fares on the Metra Electric range from \$1.75 (\$47.25 monthly) from stations north of 83rd Street, to \$4.10 (\$110.70 monthly) from University Park.

Most Metra Electric stations are accessible via CTA or Pace bus routes. Within the City of Chicago, an average of 2.1 routes serve each Metra Electric station, with a mean headway of 7.8 minutes. Overall, Chicago Metra Electric stations receive a level of bus service only slightly lower than the rapid transit lines.<sup>6</sup>

Suburban Metra stations generally include parking facilities, thereby enhancing their accessibility via auto. Exhibit 2-11 summarizes the availability of parking at Metra suburban stations. A number of stations are currently at or near their parking capacity, thereby impeding auto access. Metra has established a system-wide program for increasing park and ride capacity.

### *2.3.1.2 CTA Rapid Transit*

Two Chicago Transit Authority (CTA) rapid transit lines lie within the Study Area (See Exhibit 2-1). Both lines charge a cash fare of \$1.25, though discounts are available through the purchase of tokens or passes. The higher ridership line, the Dan Ryan Line (part of the West-South Route), travels between a southern terminus at 95th Street and the Loop El, where trains continue on the Lake Line. Most of the Dan Ryan Line, outside of downtown, runs along tracks located within the Dan Ryan Expressway median. The Dan Ryan Line has nine stations in the Study Area at approximately one mile spacing. A/B trains are operated. Peak headways are 3.9 minutes at A/B stations<sup>7</sup>, but 7.8 minutes at others.

The other rapid transit line, the Englewood/Jackson Park Line (part of the North-South Route), consists of an elevated trunk line connecting the State Street Subway with two east-west branches running along 63rd Street. The eastern branch, the Jackson Park Line, currently terminates at University Street, though a new terminus is being constructed further east at Dorchester Street, near the line's original Jackson Park terminus. The Dorchester terminal will be a full inter-modal facility serving 840 buses daily. The western branch, the Englewood Line, terminates at Ashland Avenue, where a park-and-ride facility exists. The Englewood/Jackson Park Line has 15 Study Area stations, spaced at approximately half-mile intervals.

In the Study Area, local bus routes feed almost all rapid transit stations, and also serve a local grid network. 95th Street Station on the Dan Ryan receives the most bus service among South Side rapid transit stations, with fifteen bus routes providing access to rapid transit from more remote areas south of 95th Street. Between two and four bus routes serve each of the remainder of the Dan Ryan stations. The Englewood/Jackson Park Line currently has no major intermodal transfer points like 95th Street Station, however a new intermodal Terminal is being

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<sup>6</sup> The Englewood/Jackson Park line, for instance, has an average of 2.4 buses serving each station, with an average headway of 7.2 minutes.

<sup>7</sup> 95th, 87th, 79th, 69th, and 35th.

**Exhibit 2-11**

**1990 PARKING CAPACITY USED - METRA ELECTRIC**

<b>STATION</b>	<b>LINE</b>	<b>PARKING CAPACITY</b>	<b>PARKING USE</b>	<b>% PARKING USED</b>
State Street	ELEC BI	68	34	50.0%
Stewart Ridge	ELEC BI	13	7	53.8%
West Pullman	ELEC BI	29	4	13.8%
Racine Avenue	ELEC BI	30	15	50.0%
Ashland	ELEC BI	35	0	0.0%
Blue Oak	ELEC BI	129	125	96.9%
Blue Island	ELEC BI	<u>447</u>	<u>445</u>	99.6%
		752	630	
Roosevelt Road, 12th Street	ELEC ML	0	0	
18th Street	ELEC ML	0	0	
23rd Street	ELEC ML	0	0	
27th Street	ELEC ML	0	0	
47th Street	ELEC ML	0	0	
Hyde Park, 53rd Street	ELEC ML	0	0	
56th Street	ELEC ML	180	146	81.1%
U. of Chicago, 59th Street	ELEC ML	185	180	97.3%
63rd Street	ELEC ML	0	0	
75th Street	ELEC ML	0	0	
79th Street	ELEC ML	0	0	
83rd Street	ELEC ML	32	10	31.3%
87th Street	ELEC ML	9	9	100.0%
91st Street	ELEC ML	12	0	0.0%
95th Street	ELEC ML	0	0	
103rd Street	ELEC ML	0	0	
107th Street	ELEC ML	12	10	83.3%
111th Street	ELEC ML	0	0	
Kensington, 115th Street	ELEC ML	250	218	87.2%
Riverdale, 137th Street	ELEC ML	23	23	100.0%
Ivanhoe, 144th Street	ELEC ML	340	326	95.9%
147th Street	ELEC ML	1497	1107	73.9%
Harvey	ELEC ML	832	779	93.6%
Hazelcrest	ELEC ML	309	259	83.8%
Calumet	ELEC ML	869	816	93.9%
Homewood	ELEC ML	467	460	98.5%
Flossmoor	ELEC ML	299	245	81.9%
Olympia Fields	ELEC ML	69	*	*
211th Street	ELEC ML	648	608	93.8%
Matteson	ELEC ML	965	780	80.8%
Richton Park	ELEC ML	794	737	92.8%
University Park	ELEC ML	<u>558</u>	<u>499</u>	89.4%
		8350	7218	
Stoney Island	ELEC SC	18	7	38.9%
Bryn Mawr	ELEC SC	0	0	
South Shore	ELEC SC	40	29	72.5%
75th Street, Windsor Park	ELEC SC	39	26	66.7%
79th Street, Cheltenham	ELEC SC	33	16	45.5%
83rd Street, South Chicago	ELEC SC	69	47	68.1%
87th Street, South Chicago	ELEC SC	68	60	88.2%
91st Street, South Chicago	ELEC SC	<u>167</u>	<u>146</u>	87.4%
		434	331	

\* Pedestrian access temporarily closed due to construction.



constructed at Dorchester. Currently, between one and four bus routes serve each of the line's Study Area stations. Averaged peak feeder bus headways are similar to those on the Dan Ryan Line, as is average bus route mileage.

Though the Dan Ryan and Englewood/Jackson Park lines lie less than a mile apart for much of their routes north of 63rd Street, the two lines have very different characteristics. The Englewood/Jackson Park line comprises part of Chicago's historic elevated railway system, with the Jackson Park branch originally constructed to serve the 1893 Columbian Exposition. In the past, the Englewood/Jackson Park line included several additional branches, all of which had been demolished by the 1950's, when the line assumed its present configuration. The line's trunk portion and Englewood branch now run through the middle of what were originally densely built blocks. The Jackson Park branch is supported by an elevated structure running above 63rd Street. Headways average 5-6 minutes during rush hour on the trunk and 10-12 minutes on each branch.

The Dan Ryan Line opened in 1969 and reflects the automobile age in which it was designed. The line runs along the median of the Dan Ryan Expressway with 3.9 minute peak headways, at significantly higher speeds than the Englewood/Jackson Park El, and making fewer stops outside of downtown. Most passengers reach the line via motor vehicles, either their own car, or more commonly, via bus. Stations have been designed to minimize the inconvenience of transferring from bus to rail.

Given the different service characteristics of the two rapid transit lines, it is not surprising that they serve somewhat different market segments, despite their proximity to each other. Englewood/Jackson Park riders are more than three times more likely than Dan Ryan riders to access rapid transit on foot, a contrast which probably reflects the lines' differences in surrounding land use, stop spacing, and service speed. The Dan Ryan Line runs through non-residential areas along a highway median at high speed, low headway, and one mile station spacing. Much of the adjacent land is taken up by highway and industrial uses. As a result, the line is primarily oriented toward bus and auto access. The Englewood/Jackson Park Line, on the other hand, passes through a residential area, at a relatively low speed, and has 1/2 mile station spacing. Commercial developments are also clustered around the stations, enhancing the line's orientation toward pedestrian access.

### *2.3.1.3 CTA Express Bus*

Another major transit link between the Study Area and downtown Chicago is the express bus service along Jeffery Boulevard (Routes 6 and 14), operated by the Chicago Transit Authority. Both routes originate at 103rd Street and travel along Jeffery Boulevard, stopping approximately every two blocks. North of 67th Street, Route 14 travels along Coast Guard Drive through Jackson Park, then enters Lake Shore Drive and travels express to downtown. In addition to Jeffery Boulevard, Route 6 serves the University of Chicago and surrounding Hyde Park neighborhood. Instead of entering Lake Shore Drive, it travels around Jackson Park on 67th Street, Stony Island Avenue and 56th Street before entering Lake Shore Drive at 47th Street to travel express to downtown. After arriving downtown, Route 6 terminates in the State Street transit mall, while Route 14 travels west along Madison before terminating just across the Chicago River at the Chicago and NorthWestern Station.

Both routes use articulated as well as conventional buses. Route 14 operates only in peak periods while Route 6 provides service all day and on weekends. Both offer very frequent service during rush hour, with average headways of 4.7 minutes for Route 6 and 1.5 minutes for Route 14. Even during the off-peak period, Route 6 offers a six minute headway. Both routes charge \$1.25 peak fare with a \$0.20 premium outbound. During off-peak hours, the fare is \$1.00, while the outbound premium remains \$0.20. Several of the east-west local bus routes intersect with the Jeffery Express routes and can serve as feeders although they are not specifically intended to provide feeder service to express bus. No park and ride facilities are provided on the express bus routes.

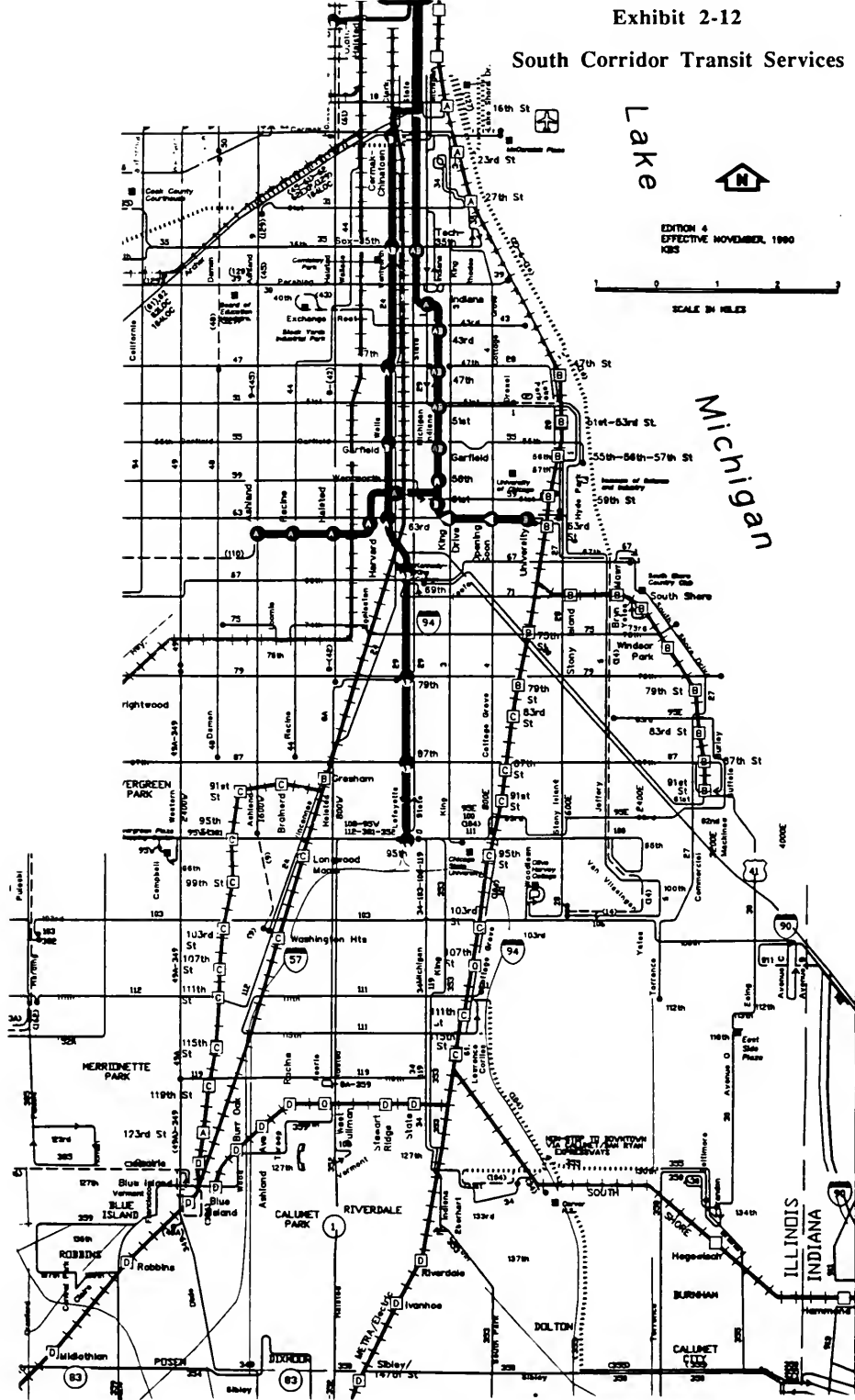
#### *2.3.1.4 Other Radial Services*

Several transit services carry transit riders between the Study Area and downtown Chicago (see Exhibit 2-12). In general, the South Corridor Study has not focused on these services because their primary markets lie outside of the Study Area or consist largely of non-downtown oriented travellers. They include two commuter rail lines, Metra's Rock Island Line and the Chicago South Shore and South Bend Line, which run near the western and eastern edges of the Study Area. In addition, a number of radial bus routes carry passengers between the Study Area and downtown, including CTA local Routes 1, 3, 4, 24, 29, 42, 44 and 45, as well as CTA express Route 2 and Pace express Route 355.

Both the Rock Island and South Shore lines have extensive service to their stations in the Study Area, with as many as 20 inbound trains per weekday. The Rock Island line has 17 stations in the western part of the Study Area, though the South Shore line has only one (Hegewisch), since its primary service area is in Indiana. CTA and PACE provide feeder bus service to both lines.

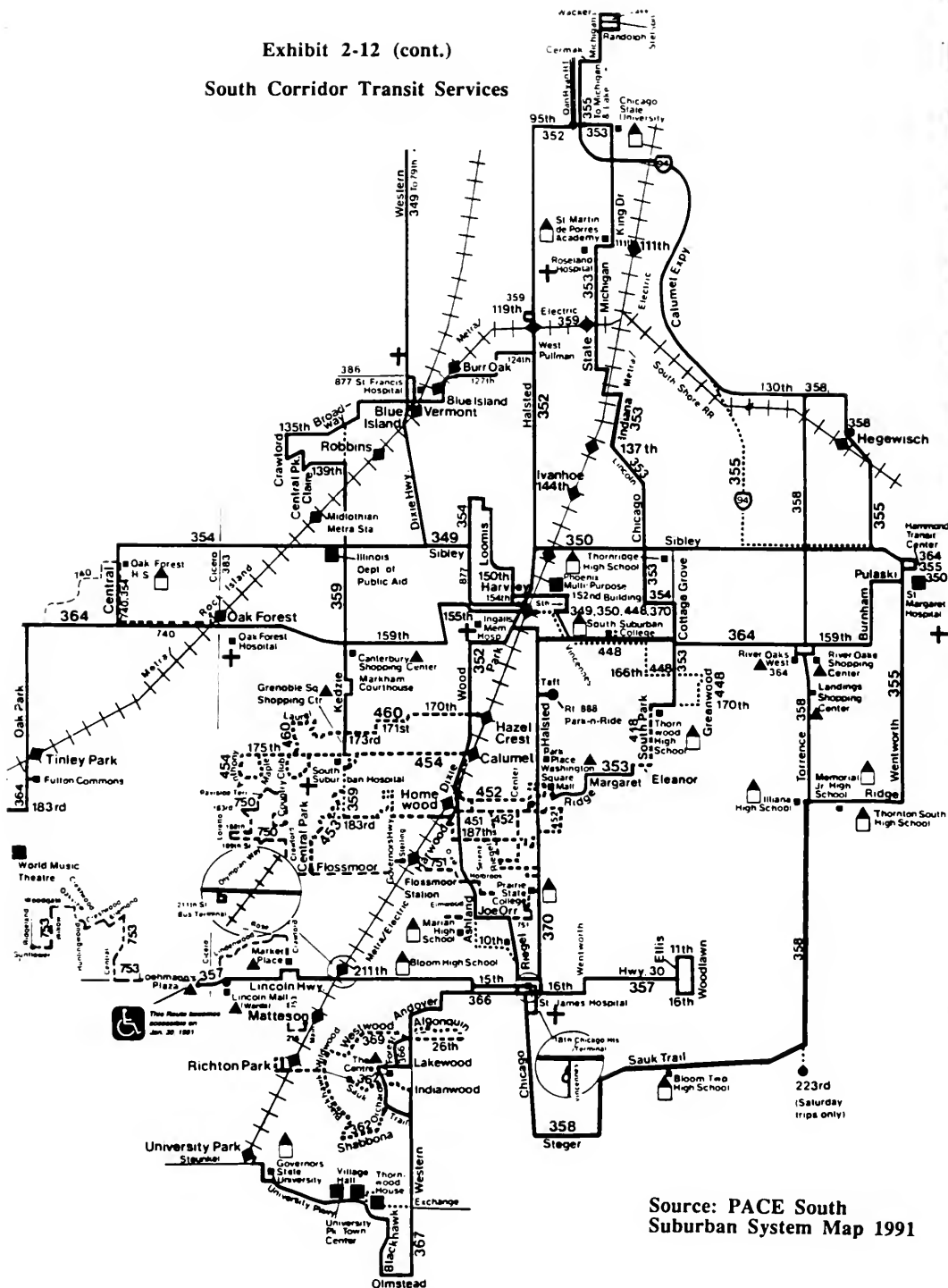
The Study Area's radial bus routes provide frequent service to downtown Chicago, though with the exception of the express routes, travel times to downtown as long as 85 minutes make them unsuited for fast, long distance travel. Among the seven CTA routes, an average rush hour headway of 6.9 minutes is scheduled, with the most frequent headway of 3.5 minutes found on route 4 (Cottage Grove) and the least frequent headway of 9.0 minutes on route 24 (Wentworth). Geographic coverage of the radial routes is best in the northern portion of the Study Area, north of 47th Street, where they converge toward downtown and are spaced at quarter mile to half mile intervals largely between Cottage Grove and Ashland.

## South Corridor Transit Services



**Exhibit 2-12 (cont.)**

**South Corridor Transit Services**



**Source: PACE South Suburban System Map 1991**

### 2.3.2. Service Quality

Service quality has a direct impact on transit ridership, since consumer decision-making is influenced by the perceived value of a good or service in relation to its cost. However, the subjective nature of some service quality issues makes it difficult to measure or quantify the value of amenities, on an absolute scale or even relative to one another. For the South Corridor Study, on-board surveys supplemented more directly measurable data about service quality, such as crowding and travel time. In general, the data reveals that commuters view Metra as offering the highest quality transit service available in the Study Area, with respect to most service attributes.

#### 2.3.2.1 Service Quality Measures

##### Average Speed and Travel Time

Travel time and line-haul speeds play a role in their ability to win riders, since slow average speeds discourage riders from travelling a long distance on a service. In the South Corridor, one finds the highest average speeds on radial lines serving areas furthest from downtown, with the Metra Electric Main Line's average speed of 48 m.p.h. more than three times that of Route 6's average speed of 15.8 m.p.h. The Dan Ryan has the second highest average speed, travelling between 95th Street and Madison Station in the Loop at an average speed of 24 m.p.h. Station spacing, curves, and speed restrictions on some segments, due to maintenance condition, of the Englewood/Jackson Park Line cause speeds to average only 14 m.p.h. This speed falls short of Route 14's average of 18.7 m.p.h., which is achieved despite a long segment of the route travelling through local street traffic.

In addition to speed, total travel time is affected by the time taken to walk to the line and wait for a train or bus. If a feeder bus trip is required then travel times can be even longer. In comparing travel times on different transit services, a weighted total travel time is usually calculated in which out-of-vehicle time (wait time and walk time) is weighted more heavily than in-vehicle time (both on the line haul service and on feeder buses). Typically, a minute of out-of-vehicle time is treated as 2.5 minutes of in-vehicle time.

If weighted travel times are used, travel time from the Study Area to downtown Chicago via a particular service increases as one moves either southward from downtown or away from the transit line. Overall, each of the services, with the exception of Metra, offers weighted travel times of under an hour from a similar portion of the Study Area. With the Dan Ryan, residents of 12 square miles can reach Madison and State Streets in under an hour, while the figure with the Englewood/Jackson Park line is 10.75 square miles, and 10 square miles with the express bus. The Metra Electric offers travel times under an hour to only 0.75 square miles. However, that figure clearly reflects the relatively poor access which the Electric provides to Madison and State Streets in comparison to areas of downtown further east, where the Metra Electric stations are located.

##### Transfers

The convenience of using a particular transit service is a somewhat intangible measure which includes travel time factors, access/egress, and other physical factors. The requirement to transfer from one vehicle to another in completing a trip merits special attention, since transfers

have a special influence on travel choice which is not adequately captured in total travel time and cost measures. This is true because riders perceive transferring as onerous and a disincentive to use transit.

The on-board survey identified riders who do not need to transfer in the course of trips, to both downtown and to other destinations. The table below identifies the percentage of riders on each service who make trips without a transfer (i.e. walk to and from the transit line):

	<u>All Destinations</u>	<u>CBD Destinations</u>
Metra Electric Near In	51%	52%
Express Bus	37%	46%
Englewood/Jackson Park	20%	26%
Metra Suburban	20%	20%
Dan Ryan	7%	9%

Source: 1989 South Corridor Study Ridership Survey

It is important to recognize that the greater percentage of single-seat riders on some modes does not necessarily mean that those modes offer more convenient transit service to the Study Area. In the case of Chicago Metra service, for instance, it suggests rather that the service's market is narrower, offering a high quality service to only those with origins and destinations within a short walk (or drive) from stations. Individuals needing to transfer tend to use CTA services or drive. Note that Metra riders make much greater use of the private automobile for access than users of CTA bus or rail services. About two thirds of suburban Metra riders and over one third of near in Metra riders use an auto for access compared to 15-20 percent of Dan Ryan riders and very few other CTA riders.

### Crowding

Load factors reflect the extent of passenger crowding and thus provide a measure of service quality.<sup>8</sup> Based on peak hour ridership, load factors have been determined for each service in 1989. Because loads can vary considerably from train to train due to fluctuations in passenger

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<sup>8</sup> Load factors are typically measured during peak hours at peak load points for the purpose of service planning and scheduling. Load factors can be measured as passenger load vs. seated capacity or capacity may include a reasonable number of standees, though not usually the ultimate crush load. For urban services, the design capacity is usually somewhere between seated and crush capacity. CTA service guidelines, for the purpose of determining service frequency, vary the number of standees included in their design load with the ridership on the bus or rail line and the time of day. This recognizes the need for reasonable service frequencies in off-peak hours when load factors are typically low. To measure load factors with a standardized base, we have selected the peak period design load used for the highest ridership level. Metra load factors are based on seated capacity since commuter rail is designed to operate with seated passengers. It is probably not appropriate to normalize all measures across modes by using seated capacity since rapid transit is designed to provide substantial standee space on rail cars with the expectation that peak loads will have standees.

arrivals and train headways, a load factor less than 100 percent does not necessarily mean that no overcrowding exists.

In the AM peak (rush) hour, the Dan Ryan Line is close to design load capacity (88%) and, in the PM peak, it is below design load capacity (79%). The Englewood/Jackson Park Line has considerably lower load factors, 52 percent in the AM peak and 56 percent in the PM peak. These low load factors result from the train length and frequency requirements of the Howard Line end of the same North-South Line. The Howard-Dan Ryan Connector will join the high demand Dan Ryan branch with the Howard Line, enabling the lower demand Lake Line to be joined with the Englewood/Jackson Park potentially increasing load factors there. (For more information on the Howard-Dan Ryan Connector, see Section 3.2.1.2)

Comparing CTA rail system averages with load factors on the Englewood/Jackson Park line, one finds the line significantly below the rail system peak average of 80 percent indicating less than average crowding. It should be noted that the Englewood/Jackson Park is second only to the Lake Line in having the lowest load factor in the AM peak, and third lowest after the Lake and Skokie Swift in the PM peak. The Dan Ryan Line, by contrast, exceeds the rail average, indicating greater than average crowding.

The two Jeffery Express routes together have an average load factor of 82 percent in the AM peak and 72 percent in the PM peak. These figures are only slightly above the system-wide averages of 78 percent and 69 percent for the AM and PM peaks respectively. The routes have a higher load factor in the AM peak hour than in the PM peak, the opposite of the rail lines. Fare policy on the express bus, which includes a 20 cent surcharge on outbound service only, could account for the ridership shift to rapid transit in the evening.

Among the Metra Electric branches, the South Chicago service has the highest load factor, with average loads around 95 percent of seated capacity in the AM peak hour and 91 percent in the PM peak. Both exceed the Metra peak hour average of 82.5 percent. Suburban Main Line service also operates with fairly high load factors in the peak hours, averaging 89 percent in the AM and 80 percent in the PM. Peak hour crowding may be slightly worse on these services than on other Metra services. On the Blue Island branch, peak loads are 82 percent in the AM peak and only 66 percent in the PM peak.

During off-peak hours, load factors on Metra Electric services are considerably lower, particularly on the Blue Island Line. Even though train lengths are typically shorter, ridership decreases even more substantially. For example, on the Main Line, where train lengths are reduced from 6-7 to 2-4 cars, the average non-peak (after 9 AM) weekday inbound train has a load factor of 31 percent. On the South Chicago Line, load factor in the off-peak averages about 14 percent. On the Blue Island Line, off peak load factor is about 6 percent. Clearly, over-crowding is not a problem on the Electric in off-peak periods.

No data is available for off-peak CTA load factors.

### 2.3.2.2 Perceived Service Quality

#### Importance of Service Attributes

Many attributes of transit service quality are not directly measured easily. The 1989 on-board survey attempted to assess not only riders' perceptions of the quality of service but also the their perceptions of the relative importance they assign to various service quality attributes. The on-board surveys asked riders to rate the importance of service attributes which they might consider in their choice of travel mode. Respondents were grouped by service with Metra Electric Near-in and suburban (Far South) riders treated separately. Across all groups, the attributes *feeling safe* and *arriving on time* appear most important to Study Area transit riders.<sup>9</sup> Among the groups, Metra riders were less likely than CTA riders to rate these two attributes as *extremely important*. Both Metra Near-In and Metra Far riders were less likely than riders on other services to rate either *feeling safe* or *arriving on time* as *extremely important*, though both groups of Metra riders cited these attributes as *extremely important* more frequently than any other attribute. The relatively smaller importance which Metra riders ascribe to *feeling safe* and *arriving on time* might reflect relative satisfaction with Metra's performance in these two respects.

In general, it appears that ratings reflect the attributes sought by discretionary riders of each service. For instance, Metra Near-In riders assign relatively low importance to both *low fare* and *convenient schedule*, a pattern consistent with their choice of a higher-priced and less frequent transit service over nearby alternatives because it suits their commuting needs. In contrast, Metra Near-In riders rated *getting a seat* as *extremely important* more often than any other group, which likely reflects the strong desire to avoid standing that influenced Near-In users to choose commuter rail in the first place. (See Appendix A for a complete analysis).

#### Perceptions of Service Quality

Riders of all surveyed services were asked to rate both Metra and CTA services. Exhibit 2-13 shows the average ratings of Metra by each rider group. All rider groups rated Metra lowest for fare, which may reflect both higher individual fares and lack of fare integration with CTA bus services. The second lowest rating was for closeness to destination, particularly by CTA riders. (Metra riders were found to walk to their destination almost exclusively, so that Metra riders do not include substantial numbers of riders whose destinations are beyond walk distances.) In general, all rider groups rated Metra fairly similarly, although for most attributes, the Metra riders gave it a better rating on average than did CTA riders.

Exhibit 2-14 shows the average rating of CTA services. The ratings were generally lower than those for Metra and show more dispersion among the groups. Metra riders rated CTA worse than the CTA riders did for most characteristics except fare. Among CTA riders, Express Bus

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<sup>9</sup> These were the first two attributes listed on the survey form, and positioning may have had an impact on ratings. In general, the survey form listed nine service attributes and asked respondents to rate each on a five point scale, with one signifying *not important*, three signifying *important*, and five signifying *extremely important*. Ratings, rather than rankings, were employed since rankings can be very difficult and time consuming to respond to. The rating system used, however, has the drawback that users might tend to rate all attributes listed as *extremely important*, thus making it difficult to distinguish between the relative importance which they ascribe to attributes.



Average Ratings of Metra  
by Rider Group

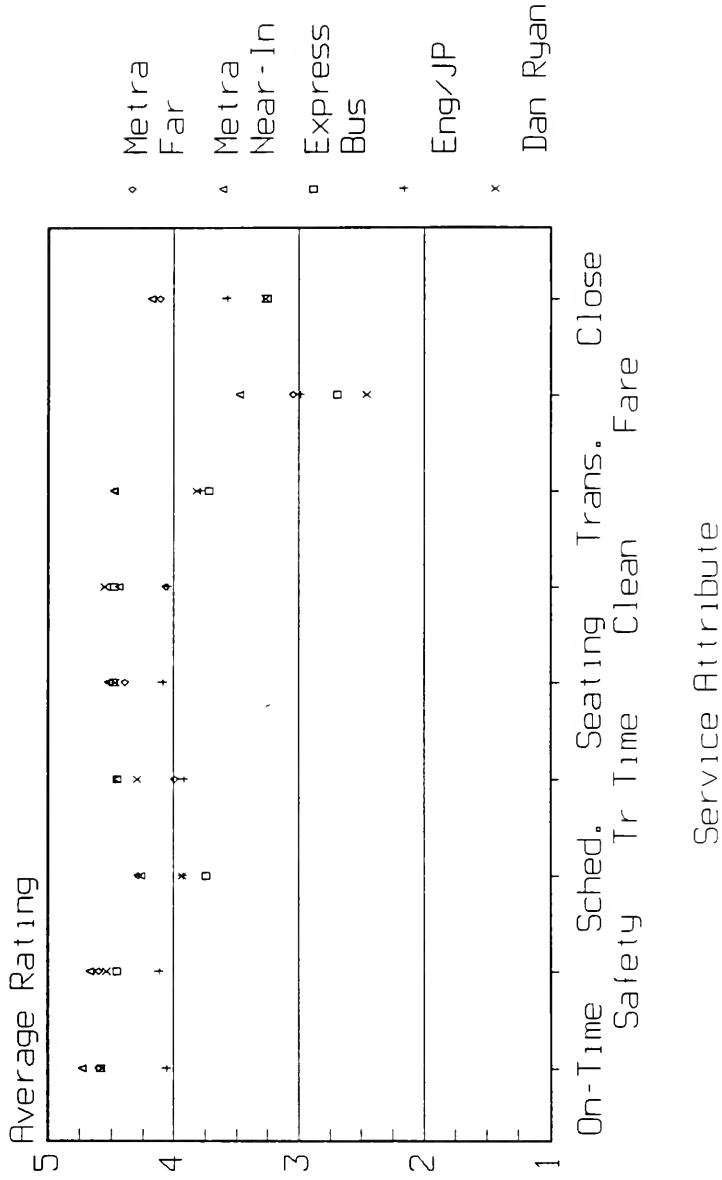
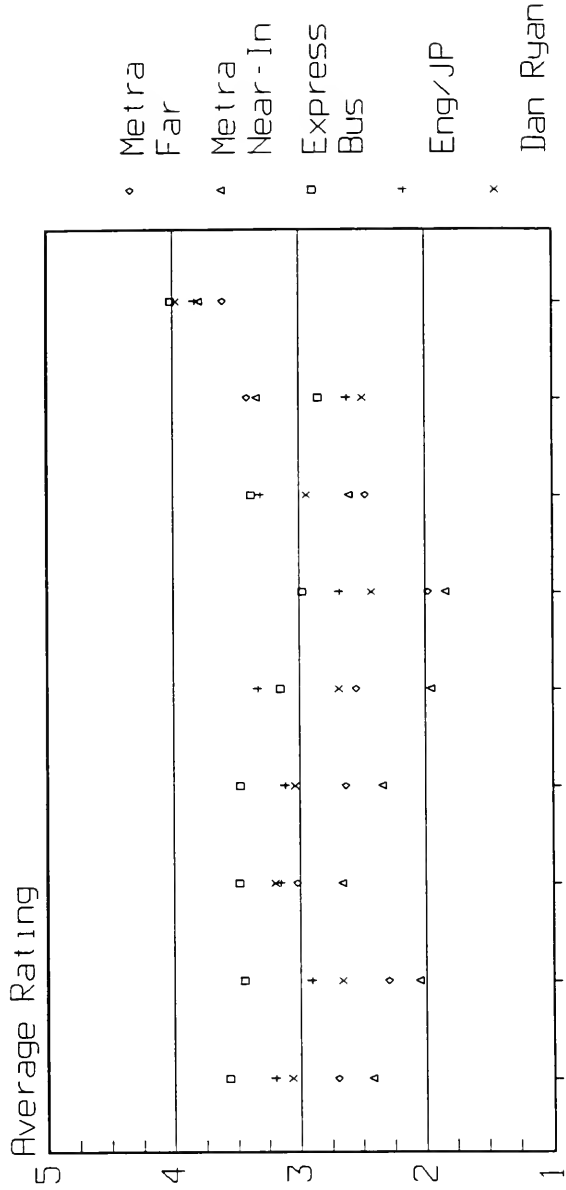


Exhibit 2-14 AVERAGE RATINGS OF CTA SERVICE ATTRIBUTES: ALL MODAL GROUPS

Average Ratings of CTA  
by Rider Group



Service Attribute

riders rated the CTA service better than rapid transit riders did. When the average ratings of CTA vs. Metra are examined separately for each rider group, large differences appear for many of the attributes, both among Metra riders and CTA riders. Most noteworthy are safety, getting a seat, and cleanliness, for which Metra is consistently rated better than the CTA. For other attributes, such as fare and closeness to destination, the average ratings are much closer or essentially the same.

Overall, service quality data suggests that Metra provides a superior service to the CTA for those who live and work near the Electric line and can afford Metra's higher fares. The CTA provides a lower cost service to a broader market, but is perceived as less attractive in some attributes.

### **2.3.3. Social Impacts**

Beyond the impact of transit services on the riders, transit can also have impacts on the broader community. Thus, in addition to serving the market for transit services, transit is often provided in order to address certain social goals set by the community. Several social goals were identified as important for this study. They include providing mobility for the transit dependent population, and providing environmental benefits. All four of the major radial transit services serve transit dependent populations in the Study Area. The Englewood/Jackson Park Line and express bus services carry the largest shares of low income and auto-less riders, while the Dan Ryan carries similar volumes of transit dependent riders, though they comprise a smaller share of total Dan Ryan ridership. All of the corridor's transit lines provide positive environmental impacts by diverting trips from automobiles, though each has its own unique set of more localized negative impacts.

#### ***2.3.3.1 Serving the Transit Dependent Population***

Performance in serving transit dependent residents was measured in two ways for each of the four major transit services. In the first method, the location of the transit services was compared with the location of low income communities. Level of service to those communities was presumed to vary inversely with distance to transit stations or stops. The second method involved analysis of rider demographics on each service, noting the representation of low income residents among the riders.

The census provides information about auto ownership, making it possible to identify areas most heavily transit dependent. According to the 1980 Census, the most recent year for which this information is available, residents of the Oakland community were the least likely to own cars, with only 23.8 percent of households possessing one. Other community areas with very low auto ownership rates included Grand Boulevard, with 25.5 percent, Washington Park, with 30.8 percent, and Woodlawn, with 40.4 percent. All of these communities are served by the Englewood/Jackson Park line, and most of them are among the poorest communities in Chicago. It is worth noting, though, that while some communities appear to be especially reliant on transit service for the mobility of residents, auto ownership across the Study Area is quite low, averaging only 62 percent of households in the Chicago portion of the Study Area.

Other factors that indicate transit dependency include high concentrations of the elderly, young people, and low income households. Using 1980 census data, the most recent available for this information, Chicago Study Area communities were identified that possess the largest

concentrations of these groups. Four communities stand out as having the highest concentrations of these groups: Grand Boulevard, Washington Park, Near South Side, and Riverdale. The first two of these are served largely by the Englewood/Jackson Park Line although the Dan Ryan Line and local buses also provide radial service. The Near South Side is served mostly by local buses, while Riverdale is served by feeder buses to the Dan Ryan Line.

On-board surveys conducted for the South Corridor Study identified groups of riders on each service who are likely to be transit dependent. These riders include individuals with no car available to make trips downtown, or with a car available only with inconvenience to others. Among the services surveyed, the express bus had the largest share of riders with no auto available, with a total of 59 percent indicating difficulty in obtaining one for their trip. The Englewood/Jackson Park line, serving an area where auto ownership is least common in the Chicago Study Area, had the second highest percentage of transit dependent riders, 51 percent. Dan Ryan and Metra Electric carried an even smaller share of passengers who could not easily make the trip by car, with 46 percent and 41 percent, respectively.

Using income rather than auto availability to gauge transit dependency, one finds that 13 percent of riders on both the Englewood/Jackson Park line and the Jeffery Express fell in a very low income category (annual income below \$10,000, in 1989). On the Dan Ryan Line, by contrast, only 8 percent of riders fell into that category, while on the Metra Electric, the figure was 3 percent. Examining the share of riders on each service with incomes below \$20,000, one finds an even more marked pattern. On the Englewood/Jackson Park line, 39 percent of riders fall into that category, compared to 29 percent of riders on the express bus, the service with the second highest share of lower income riders. Exhibit 2-15 highlights the fact that each transit service has a different rider income profile.

### *2.3.3.2 Environmental Impact*

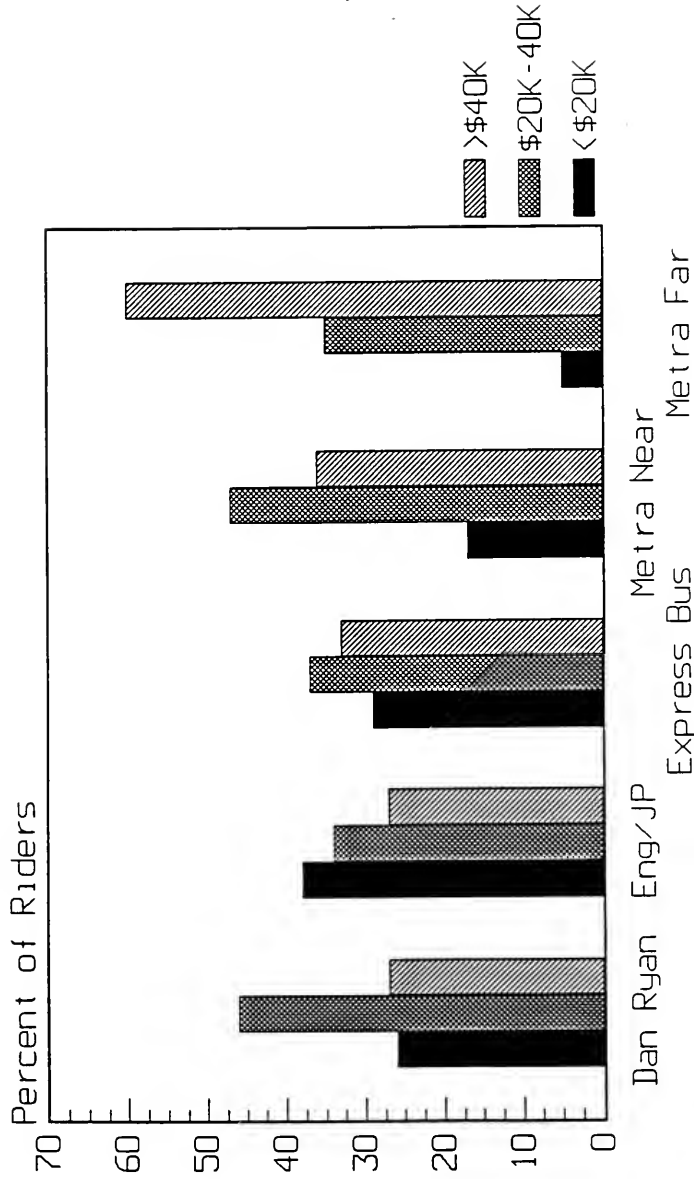
Transit services often have significant environmental impacts, both positive and negative. Positive effects accrue from transit's ability to divert people from private autos, thereby decreasing automobile emissions and traffic congestion. Transit's negative impacts result from vehicle noise and vibration, as well as shadow and visual blight caused by elevated or surface right of way. While the existence of a transit service almost certainly produces a net environmental benefit, the positive impacts tend to be spread over a large area, while the negative impacts are experienced almost exclusively by relatively small numbers of residents living near the transit line.

Transit service produces positive environmental impacts in that it helps reduce air pollution and traffic congestion by attracting riders from the automobile. It is outside the scope of this evaluation to measure air pollution or auto traffic diversions, however, the ridership achieved by each transit mode may be used as an indicator of positive environmental impacts. The four major South Corridor radial transit services carry approximately 249,000 passengers on a typical weekday. Clearly, the impact of placing all, or even a significant share, of these trips on the highway system would be enormous.

The Study Area transit services also produce negative impacts to varying degrees. These impacts include diesel fumes from buses, noise from rail vehicles operating on surface or elevated right of way, aesthetic and shadow impacts of elevated structures and fixed facilities, as well as urban design impacts caused by railroads dividing neighborhoods. Among the Study Area transit services, these negative impacts are evident in the following cases:

# INCOME DISTRIBUTION OF THE FIVE MODAL GROUPS

Income of Riders of  
South Corridor Services



- The Englewood/Jackson Park Line operates through neighborhoods above ground on an elevated structure causing noise impacts and shadows on commercial and residential streets. The impacts are limited in most areas because the line runs in a mid-block alignment but in some locations along 63rd Street it spans the street creating significant shadows.
- The Dan Ryan Line operates through much of the Study Area in the median of an expressway. As a result, the additional impact on neighborhoods is minimal when compared to the impacts caused by the expressway.
- The express bus service operates with diesel buses at a very high frequency on a residential street (Jeffery Boulevard) in a portion of the route. There is some noise impact associated with this bus service as well as emissions of air pollutants, though the lack of fixed facilities eliminates any other potentially negative impacts.
- Metra Electric service operates on surface right of way as well as on an embankment with elevated crossings. The wide right-of-way on the elevated Main Line creates long, dark unattractive underpasses that tend to form barriers between neighborhoods. The location of the right of way in the median of local streets in South Chicago creates a pedestrian barrier, while the use of double deck cars raises issues of compatibility with urban commercial and residential land uses.

## **2.4. RIDERSHIP MARKETS FOR RADIAL SERVICES**

To understand market response to radial services offered in the Study Area requires knowledge of ridership patterns, both past and present. To assess the market for radial services, the study has gathered all available data relating to transit use in the South Corridor, and has collected new data through on-board surveys. Analysis of the data has confirmed the dominant market role of the Dan Ryan Line, but has also highlighted differences in the markets served by each radial service in the Study Area.

### **2.4.1. Historical Ridership Trends**

Since 1970, total ridership on the four major radial services has declined 16 percent matching a Study Area population decline of 17 percent over the past two decades. Ridership trends have varied by Study Area service, with declines in rapid transit and Near-In Metra Electric ridership, and gains in CTA express bus and Electric suburban ridership. Population losses probably account for most of the ridership decline on the rapid transit lines, although service-related factors may have played a role. Declines in Electric Near-In ridership are more difficult to explain by population losses, since ridership losses of more than two-thirds over the past twenty years greatly exceed population losses in its primary service areas. In contrast, Electric suburban service, as well as the Lake Shore Express Buses, have both posted

**substantial gains in the 1980's, despite declining or stable service area populations.**

#### *2.4.1.1 Metra Electric Commuter Rail*

In 1986, Metra commuter rail carried 70 million passengers, a figure representing 21 percent of all commuter rail trips in the United States that year. Only the New York MTA, with 49 percent of the total U.S. market, serves more commuter rail passengers annually. In keeping with a national trend, system-wide Metra ridership has increased steadily since 1983, when in the wake of a large fare increase, ridership reached an all-time low of 59 million. But even after five years of steady growth, Metra ridership has barely reached the level of the late 1960's.

On the Metra Electric line, which provides commuter rail service to the Study Area, overall ridership has declined by 23 percent since 1970. Ridership trends have varied substantially between the south suburban and Near-In portions. On the suburban Main Line service, ridership in 1989 was 25 percent higher than in 1971. In the interval between, ridership experienced two long periods of slow, steady growth, one during the 1970's, as south suburban population increased by more than 50 percent. After a sharp decline in the wake of the 1981 fare increase, ridership resumed growth in the 1980's. During this period, ridership growth was probably driven by the buoyancy of downtown Chicago's economy, rather than service area population growth, which had subsided during the 1980's.

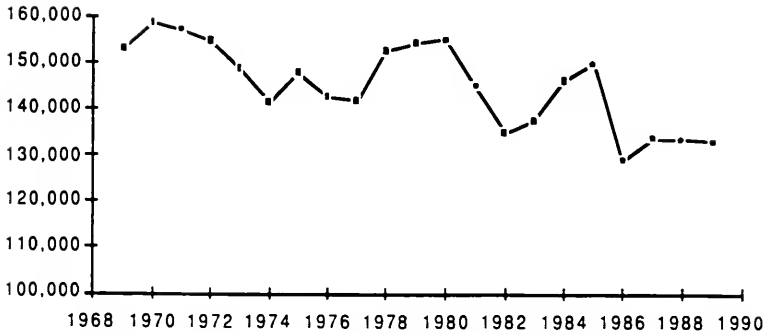
In contrast to the suburban Main Line, the Electric Near-In Mainline, South Chicago and Blue Island branches have experienced dramatic declines in ridership since 1970. The more than 50 percent ridership decline has outpaced even the sharp rate of population decline in their service areas. Significant system changes contributing to this decline include: the opening of the Dan Ryan line in 1969, commuter rail fare standardization in the late 1970's, and increases in Express Bus service in the early 1980's. Since 1983, Electric Near-In services have arrested the pattern of steep decline evident in earlier years, and have even made modest ridership gains in some cases. Between 1987 and 1988, for instance, the South Chicago branch experienced 17.5 percent ridership growth, while ridership grew by 3.2 percent on the Blue Island.

#### *2.4.1.2 CTA Rapid Transit*

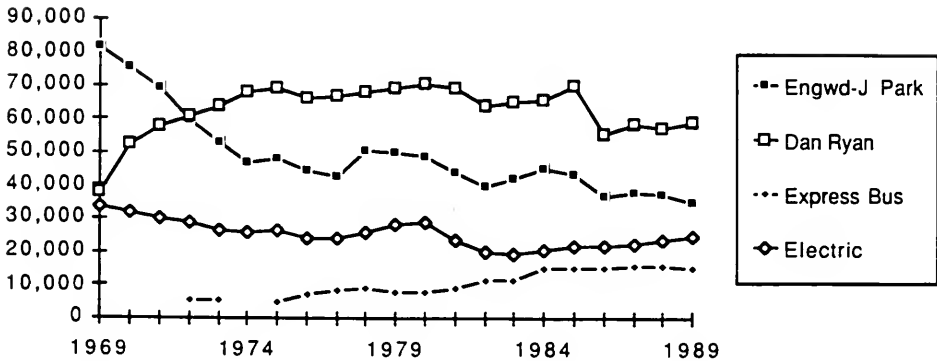
The Dan Ryan and Englewood/Jackson Park lines together carried 28.7 million passengers in 1988. This figure represents about 20 percent of total CTA rail passengers and 1.2 percent of heavy rail passengers in the U.S. Between 1970 and 1989, daily total ridership on the two lines declined by approximately 25 percent. A 25 percent population loss occurred in the Chicago portion of the Study Area during the 1970-90 period. In the early 1970's the Dan Ryan gained substantial ridership largely at the expense of the Englewood/Jackson Park. (see Exhibit 2-16) Since then Dan Ryan has varied, matching its 1975 level in 1980 and 1985. Following a fare increase, ridership dropped in 1986 and has seen slight growth since. Englewood/Jackson ridership has mirrored the direction of the Dan Ryan's year to year variation, but with generally smaller gains and larger losses resulting in an overall downward trend. Since 1975 Englewood/Jackson Park ridership has declined 27 percent, compared to the Dan Ryan's 15 percent decline. Ridership on the Jackson Park Branch was negatively impacted by introduction of the #14 Express Bus service in 1982, and the temporary closure and permanent shortening of the Branch due to structural problems with the Dorchester bridge.

Exhibit 2-16

**SOUTH CORRIDOR TOTAL RIDERSHIP TREND**  
weekday boardings in study area



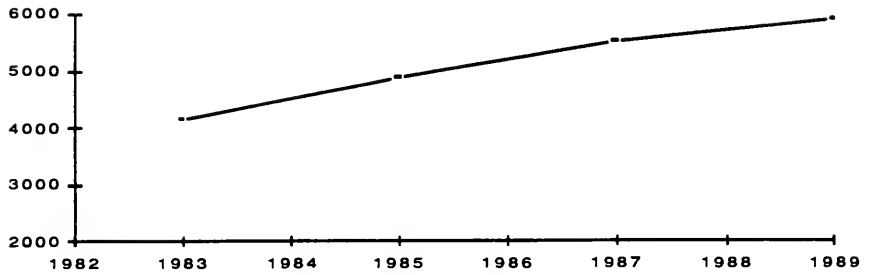
**DAILY RIDERSHIP TRENDS BY SERVICE**  
weekday study area boardings



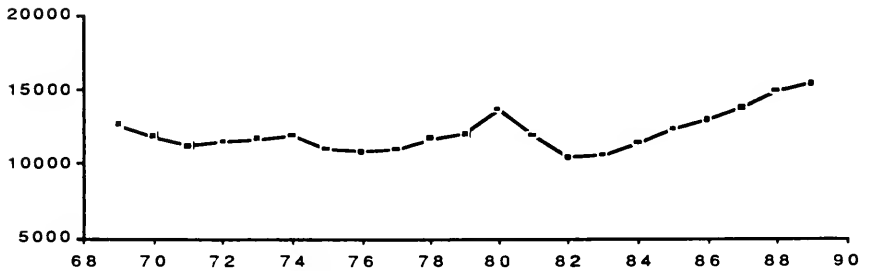


**Exhibit 2-16 (cont.)**

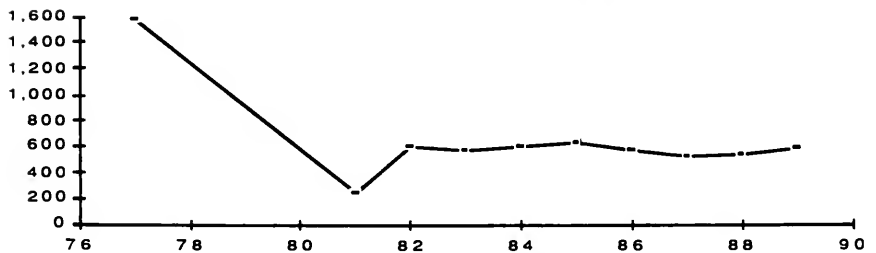
**Chicago South Shore Daily Inbound Ridership**



**Metra Rock Island  
Daily Inbound Ridership**



**Lansing Express Bus  
Daily Inbound Riders**



More recently, the temporary closure of Branch stations for reconstruction has impacted ridership.

Taking an even longer perspective, one sees that the Englewood/Jackson Park's decline began before the construction of the Dan Ryan line. Between 1950 and 1965 Englewood/Jackson Park ridership declined by 31 percent, as branches of the line were closed and demolished. The CTA rail system as a whole experienced a similar decline, losing 23 percent of its ridership. These declines are probably attributable to large increases in automobile ownership, highway construction, and suburbanization.

#### *2.4.1.3 CTA Express Bus*

Routes 6 and 14 have together shown dramatic ridership growth from 1972 to the mid 1980's and have been flat since then. In 1972 peak hour load totals stood at just over 1,000 riders in the morning and approximately 2,000 riders in the evening. By 1987, the morning peak hour ridership had grown to approximately 4,500, a gain of 350 percent, while evening ridership totalled more than 3,000, a gain of more than 50 percent (see Exhibit 2-16).

#### *2.4.1.4 Other Radial Services*

In the 1980's, the Rock Island and South Shore Lines both showed gains in ridership (see Exhibit 2-16). On the South Shore Line, those gains raised daily in-bound patronage by over 40 percent, from just over 4,100, where it stood in 1983, to approximately 5,900 in 1989. At Hegewisch, the one Study Area station served by the line, boardings also grew during most of the 1980's, to 1,600 daily in 1989. The Rock Island Line saw growth that increased its daily ridership by a similar fraction in the 1980's, climbing from approximately 12,000 daily in-bound riders in 1981 to 15,000 in 1989. Taking an even longer perspective, one sees that the Rock Island has followed a pattern of stable ridership over the past 20 years, with two periods of growth; the late 1970's and the late 1980's resulting in a 1989 ridership level that was 20 percent higher than 1969.

The Lansing Express bus, a radial service operated by Pace, has also shown remarkable ridership stability since 1982. As Exhibit 2-16 shows, daily ridership has held steady, after a 60 percent decline from the level of the 1970's. Route 355 is the last surviving south suburban express bus route. As recently as 1969 there were four routes originating in Lansing, Chicago Heights, Altgeld Gardens, and Harvey/Blue Island. Service on all but the Lansing route was halted between 1970 and 1981 due to declining performance. The opening of the Dan Ryan rapid transit line in 1969 and associated restructuring of CTA and south suburban bus routes appears to be the cause.

### **2.4.2. Current Ridership**

This section presents information about current ridership levels on the Study Area's four primary transit services. The information makes it possible to identify the absolute size of each transit service market, as well as its relative market share. It reveals that the Dan Ryan Line accounts for almost half of the ridership on the major radial services, the Englewood/Jackson Park Line almost one quarter, the Metra Electric one fifth, and Express Buses an eighth.

Comparing the ridership at individual stations, one sees that the Dan Ryan has some of the most intensely-utilized stations in the CTA rapid transit system, while the Englewood/Jackson Park line some of the least. The

Englewood/Jackson Park line, however, shows surprising strength in its station boardings where it competes most directly with the Dan Ryan. The Metra Electric has some of the most and least utilized stations in the Metra system.

#### *2.4.2.1 Total Ridership*

Among the four radial transit services studied, the Dan Ryan Line plays a clearly predominant role in the Study Area. It carries the most riders, with almost half of radial transit users in the Study Area choosing it over the three other primary radial transit alternatives. Exhibit 2-17 displays ridership distribution among the four primary services and their branches.<sup>10</sup> Together, the four services carry 249,000 weekday passengers. Of these, the Dan Ryan line carries 115,000 riders, or 46 percent of the total. The Englewood/Jackson Park line carries 58,000 passengers, or 23 percent of the total. The CTA express buses carry 29,000 riders, or 12 percent of the total, while Metra Electric carries 47,000 passengers, or 19 percent of the total. On weekends, Metra's share of ridership diminishes to just five percent of the total, a decline attributable to Metra's service orientation toward weekday peak period trips.

#### *2.4.2.2 Ridership by Station*

The Study Area contains some of the most and least heavily used stations in the CTA and Metra systems (see Exhibit 2-18), and reflect some of the strengths and weaknesses of their lines. For example, 95th Street Station on the Dan Ryan Line ranks first in the CTA system on the basis of weekday boardings. Likewise, Homewood, on the Electric Main Line, ranks ninth in the Metra system. At the opposite extreme, Wentworth, on the Englewood/Jackson Park Line, has the lowest ridership of any station in the CTA rapid transit system and other Englewood/Jackson Park stations like Harvard, 58th Street and Indiana rank close behind. However, several stations on the Englewood/Jackson Park line, like Ashland and Tech-35, do exceed the CTA rail average.

The suburban Metra Electric stations significantly exceed Metra's system-wide average for daily boardings, while the Chicago stations significantly fall below that average. Outside of Chicago, Olympia Fields alone fails to exceed the Metra average of 610 daily boardings per station, while in the city, only Hyde Park, 59th Street, Kensington, and 91st Street stations exceed the average. The Electric's lowest ridership stations are especially concentrated in the central and the innermost portion of the Main Line, and the inner stations on the Blue Island Branch. There, one can find 12 of the 30 lowest ridership stations in the 228 station Metra system.<sup>11</sup> On the South Chicago branch, ridership is strongest near the line's southern terminus, where minimal competition from express bus service exists. The high level of boardings at suburban stations results in 70 percent of Electric ridership being generated outside the City of Chicago.

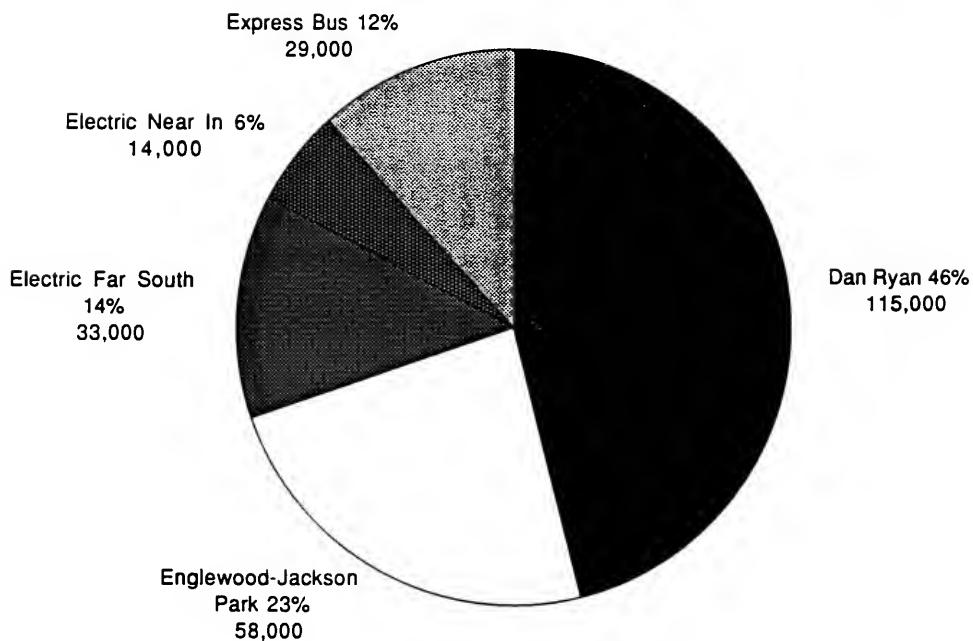
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<sup>10</sup> Ridership is summarized for weekday, Saturday and Sunday, based on November 1989 figures. Ridership has been derived from counts of boardings provided by the service boards. Ridership figures reflect one-way trips to and from the Study Area in both directions. For CTA rail services, ridership was calculated by doubling the boardings at Study Area stations and subtracting intra-Study Area trips. For Metra Electric and CTA express bus services, figures are simply total boardings.

<sup>11</sup> On the Near In Main Line: 18th Street (ranks 219), Kenwood (200), 63rd (215), 75th (209), 83rd (202), 87th (203), 91st (206), 95th (207), 107th (208), Pullman (204).  
On the Blue Island Branch: West Pullman (214) and Racine (199)

**Exhibit 2-17**

**1989 Weekday Ridership Shares  
249,000 Total Riders**



**Exhibit 2-18**

**TOTAL 1989 STATION BOARDINGS**

<u>SERVICE</u>	<u>SYSTEMWIDE</u>			
	<u>WEEKDAY</u>	<u>RANKING</u>	<u>SATURDAY</u>	<u>SUNDAY</u>
<u>Dan Ryan</u>		of 142		
Cermak-Chinatown	1750	93	1050	1150
Sox-35	2850	62	1300	1150
47th	1550	99	1150	1050
Garfield	3400	46	2250	2100
63rd	3250	54	2050	1850
69th	7900	16	4800	4150
79th	8400	15	4700	3800
87th	6450	22	3050	2250
95th	23300	1	9250	8900

<u>Englewood/Jackson Park</u>				
Main Line	Tech-35	3950		1550
Main Line	Indiana	900	128	450
Main Line	43rd	2000	81	1100
Main Line	47th	3100	56	2150
Main Line	51st	2800	65	1800
Main Line	Garfield	2000	83	1300
Main Line	58th	750	135	450
Jackson Park	61st	1150	117	600
Jackson Park	King Drive	2700	66	1300
Jackson Park	University	1850	89	1250
Englewood	Wentworth	500	142	250
Englewood	Harvard	700	138	300
Englewood	Halsted	1850	90	1150
Englewood	Racine	1300	112	600
Englewood	Ashland	4450	37	2250

Note: Cottage Grove Station was under construction in 1989

CTA AVERAGE 3600

Electric

<u>Electric Main Line</u>		of 228		
	18th	20	219	25
	23rd	140	167	42
	27th	139	169	24
	Kenwood/47th	69	200	10
	Hyde Park/53rd	656	83	227
	55/56/57	542	93	195
	59th	856	61	330
	63rd	29	215	12
upper	subtotal	2451		865

255

**Exhibit 2-18 (Continued)**

SYSTEMWIDE						
SERVICE		WEEKDAY	RANKING	SATURDAY	SUNDAY	
central	75th	47	209	8	9	
	79th	103	181	7	8	
	83rd	67	202	20	4	
	87th	65	203	14	6	
	91st	51	206	9	10	
	95th	51	207	16	7	
	103rd	74	195	15	3	
	107th	48	208	9	5	
	Pullman/111th	57	204	11	11	
	Kensington/115th	1007	52	156	28	
	subtotal	1570		265	91	
	Riverdale	661	82	89	38	
	Ivanhoe	1368	29	231	66	
	147th	1591	16	129	35	
	Harvey	1546	19	169	43	
suburban	Hazel Crest	779	68	105	26	
	Calumet	1351	30	93	27	
	Homewood	1880	9	295	77	
	Flossmoor	1416	26	191	60	
	Olympia Fields	310	131	32	10	
	211th	1082	49	156	65	
	Matteson	1372	28	137	47	
	Richton Park	1680	14	301	93	
	University Park	782	67	148	51	
	subtotal	15818		2076	638	
	<u>Electric S. Chicago Branch</u>					
	east-west	Stony Island	247	148	58	8
		Bryn Mawr	171	161	62	9
		South Shore	372	122	121	35
		subtotal	790		241	52
north-south	Windsor Park	381	120	120	17	
	Cheltenham	258	143	55	19	
	83rd	511	98	125	28	
	87th	377	121	96	21	
	91st	997	54	203	69	
	subtotal	2524		599	154	
<u>Electric Blue Island Branch</u>						
inner	State Street	81	189	8	N/A	
	Stewart Ridge	90	188	7	N/A	
	West Pullman	36	214	8	N/A	
	Racine Avenue	71	199	7	N/A	
	subtotal	278		30		
outer	Ashland	154	164	16	N/A	
	Burr Oak	367	123	27	N/A	
	Blue Island	323	129	59	N/A	
	subtotal	844		102		
METRA AVERAGE		610				

On the Study Area rapid transit system, it is interesting to compare ridership between competing segments of the Englewood/Jackson Park and Dan Ryan lines. For instance, between 35th Street and 63rd Street, where the lines run parallel to each other just a few blocks apart and compete most directly with one another, ridership patterns reveal the strength of the Englewood/Jackson Park line. On this parallel segment, the Dan Ryan has 11,050 boardings on weekdays, while the Englewood/Jackson Park line has 17,850 boardings. The Englewood/Jackson Park's superior ridership performance in this case probably reflects the existence of 10 Englewood/Jackson Park stations on that portion of the line, while the Dan Ryan has only four. Other characteristics of the Englewood/Jackson Park that may contribute to its ridership strength are proximity to residential areas, and perhaps, more available seating on trains.

Where both lines have stations located at the same cross streets, ridership is split between the lines; in some cases, the Dan Ryan has more riders, in others, the Englewood/Jackson Park. The Englewood/Jackson Park line is the predominant line at 35th and 47th Streets, while the Dan Ryan line is the predominant line at Garfield and at Harvard/63rd. Because no overwhelming preference for either rapid transit line is evident, it is suspected that origin and destination proximity to stations influence line selection. Origin and destination impacts on rider markets are discussed in the next section.

Express bus ridership was not available by stop or segment.

#### **2.4.3. Travel Markets Served by Radial Services**

In analyzing service markets, it is useful to look at how those markets are segmented, so that the impacts of changes in service offered can be understood at a detailed level. Doing so according to locations of trip origins and destinations, as well as trip purpose, makes possible several important insights. For instance, the Dan Ryan Line serves a wide geographic area in terms of rider origins, but a much more limited group of rider destinations and trip purposes. By contrast, the other services have more geographically defined markets.

The Englewood/Jackson Park Line serves a wider range of destinations, as well as trip purposes, within a relatively small catchment area. The express bus serves both downtown-oriented and local trips for diverse trip purposes and income groups, also within a defined catchment area. Metra Electric serves a narrow geographic area within Chicago and a broader market for downtown commuting in the suburbs. Metra also tends to serve more affluent markets than the other Study Area services.

##### **2.4.3.1 Market Segmentation**

Transit systems are typically designed so that each major radial service serves a fairly clear origin 'catchment area'. As a result, radial trips originating from a given geographic area tend not to be spread among several radial services. In some parts of the Study Area, however, the close proximity of the radial services causes overlapping catchment areas resulting in market segments (geographical areas) being split between multiple services.

Segmentation by destination is often an important feature of transit markets as well, since riders prefer to use services which bring them closest to their final destination. In the South Corridor, destinations appear to play an especially important role in determining market

segments, given the large number of transit services in the Study Area which serve similar trip origin markets and somewhat different downtown destination markets.

Trip purpose provides another way to segment transit markets, since riders tend to make different choices when making work, rather than non-work, trips. In general, riders travelling to work tend to be more sensitive to travel time and less sensitive to travel cost than riders making non-work trips.

#### *2.4.3.2 Trip Origins and Catchment Areas*

The surveys of in-bound riders, south of 43rd Street, identified the location of trip origins in the Corridor (see Exhibit 2-19). They further revealed the ability of the Dan Ryan Line to attract riders. While the Metra Electric, express buses, and the Englewood/Jackson Park Line draw riders primarily from immediately adjacent areas, the Dan Ryan Line draws riders from almost all of the Near-In Study Area (see Exhibit 2-20). The survey also revealed that most riders access the Dan Ryan and Englewood/Jackson Park lines via bus, while the express bus and Chicago Electric stations are accessed primarily on foot. Suburban Metra Electric riders are drawn from a large geographic area and access stations chiefly via auto (see Exhibit 2-21).

##### Metra Electric

The survey revealed important differences in geographic distribution and access mode that distinguish Metra Near-In and suburban riders. Suburban riders, who represent the lion's share of Metra Electric patronage, originate from a wider geographic area than their Chicago counterparts (See Exhibit 2-22). Though most of the heavy rider concentrations are found near stations, in the suburban service area, several heavy rider concentrations exist miles from the nearest station. Most riders (73%) use private autos to access Metra, though a significant share (21%) walks.

Fewer in number, Metra Near-In riders originate primarily from within one mile of Metra stations, except on the South Chicago branch, where significant numbers originate from further away, in places like East Side. Only in a few locations do large concentrations of Near-In riders exist, such as along the South Chicago branch, in Hyde Park, and near 115th Street station (see Exhibit 2-23). With most riders originating near the stations, it is not surprising that the majority of Near-In Metra riders (58%) reach stations on foot. Almost all of the remainder (38%) reach them via private auto. There is almost no use of local bus as a feeder to Metra, possibly because of the lack of integrated fares.

##### Dan Ryan

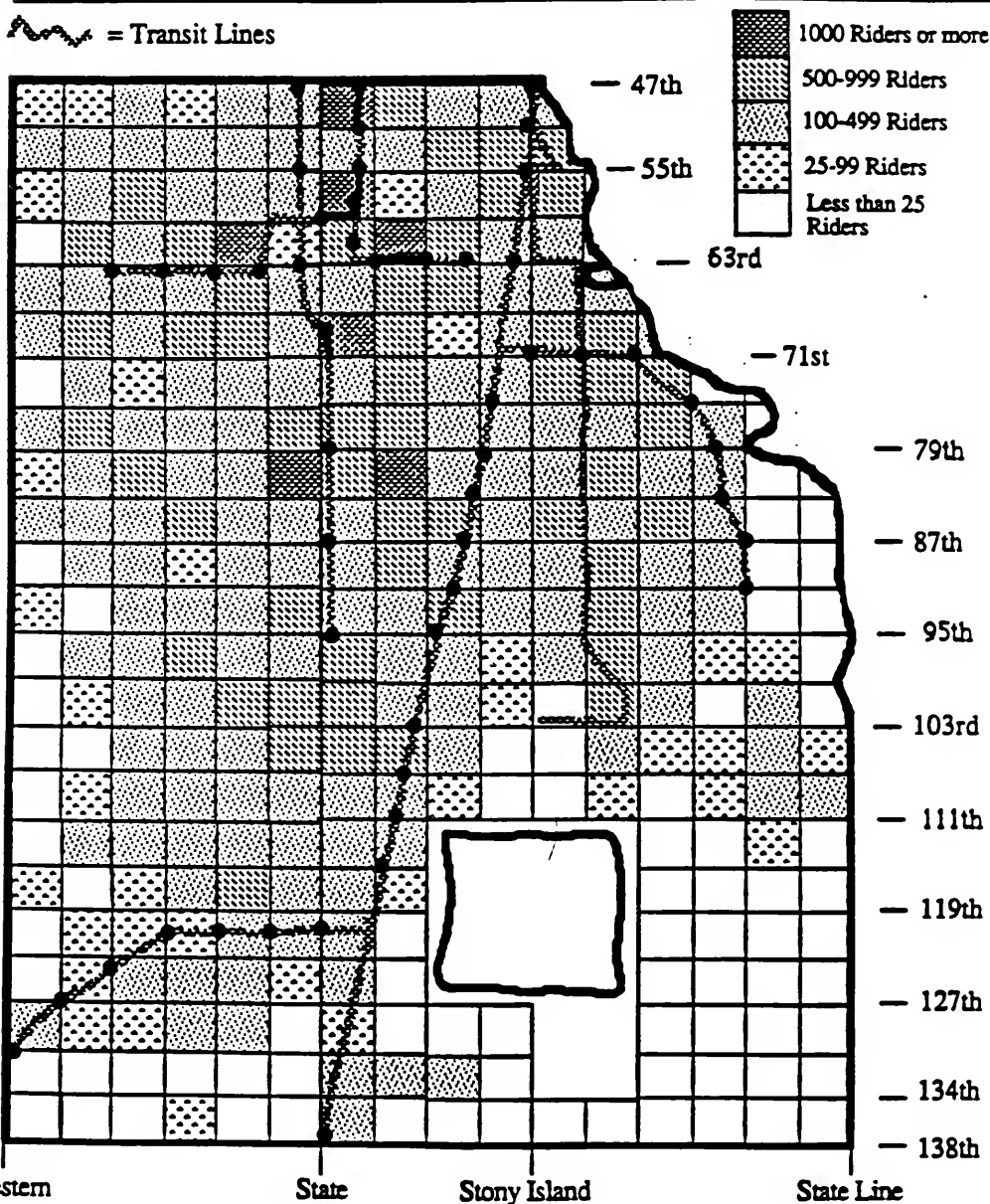
The Dan Ryan Line draws its ridership from virtually everywhere in the Chicago portion of the Study Area, with considerable numbers of riders travelling to the line from several miles away via local bus routes. However, the highest level of Dan Ryan ridership originates around the 79th Street and 95th Street stations. Other riders are drawn from as far east as South Chicago, despite the existence there of high frequency express bus service along Jeffery Boulevard and rail service on the Electric South Chicago Branch. The survey uncovered riders using the Dan Ryan from virtually everywhere in the Chicago Study Area, and even from the south suburbs. The line is the predominant transit service in the southern tier of the city, despite the availability of Electric Blue Island and Main Line services. From the northern part of the Study Area, particularly east of State Street, fewer riders use the Dan Ryan Line because of the parallel service provided by the other radial transit services (see Exhibit 2-24).



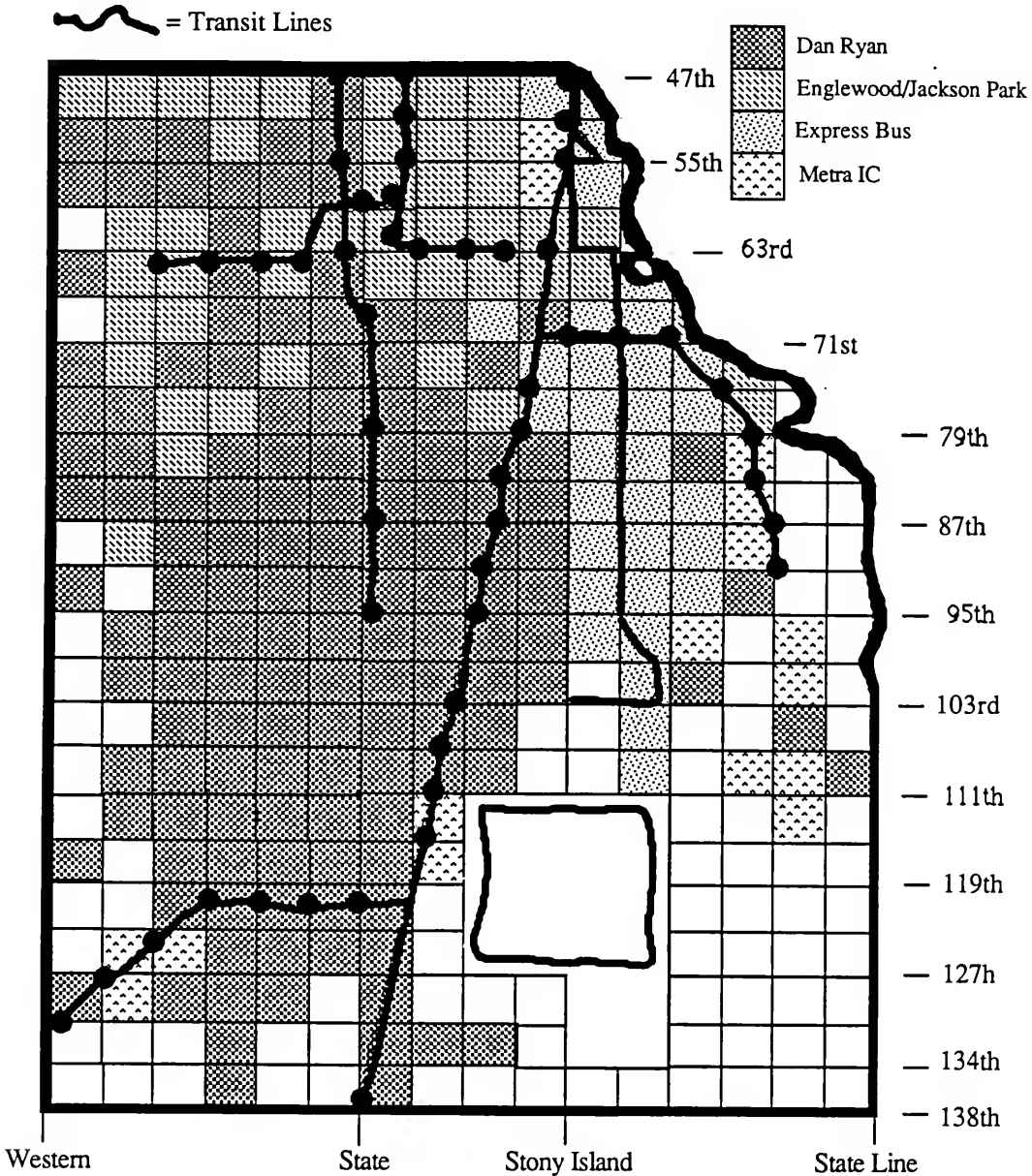
**RIDERSHIP BY ORIGIN QUARTER SECTION:**

Distribution of Origins of Riders of all South Corridor Lines

 = Transit Lines



PREDOMINANT MODE BY ORIGIN QUARTER SECTION



**Exhibit 2-21**

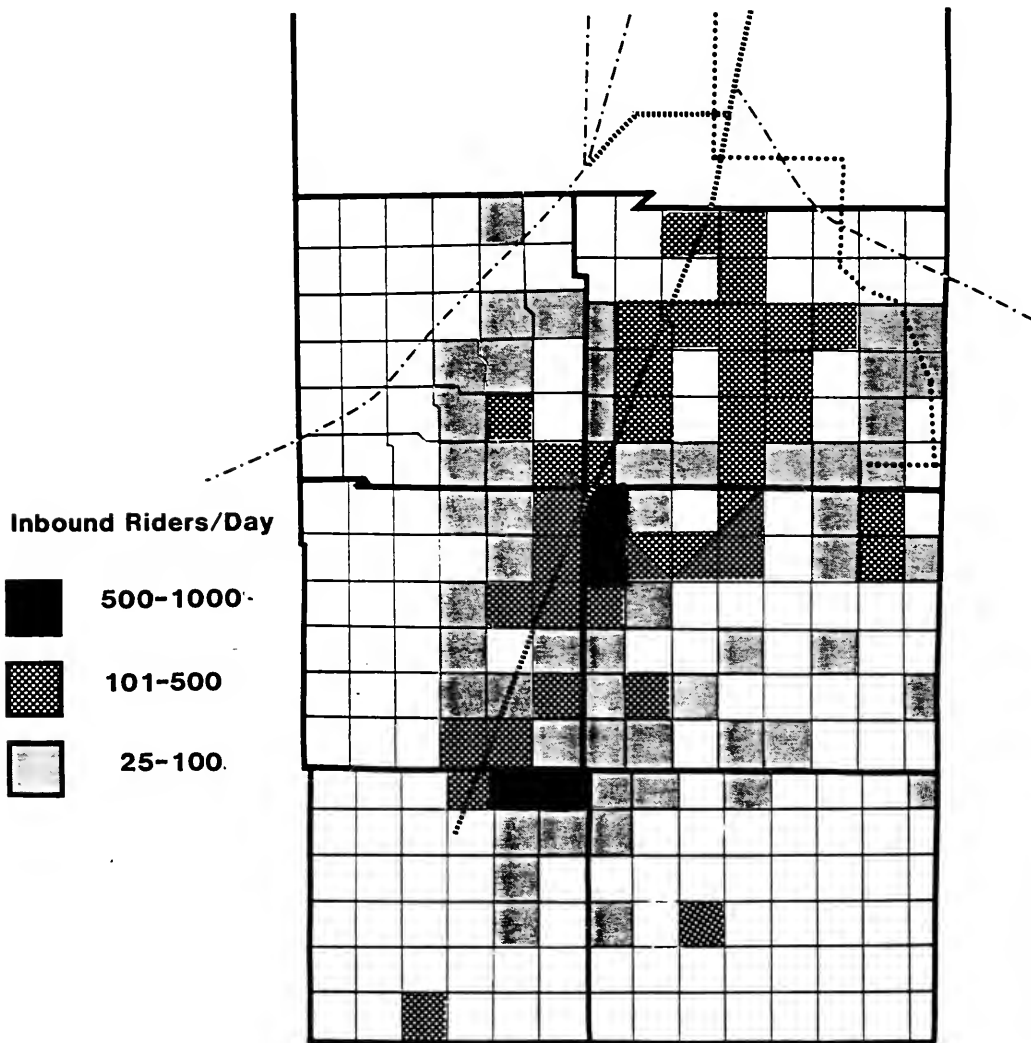
**ACCESS MODE USED BY SOUTH CORRIDOR RIDERS**

<u>SERVICE</u>	<u>BUS</u>	<u>AUTO</u>	<u>WALK</u>
Dan Ryan	65.0%	23.0%	12.0%
Englewood/Jackson Park	50.0%	12.0%	38.0%
Express Bus	25.3%	9.1%	65.7%
Electric (Near In)	4.1%	37.8%	58.2%
Electric (Far)	6.1%	72.7%	21.2%

Exhibit 2-22

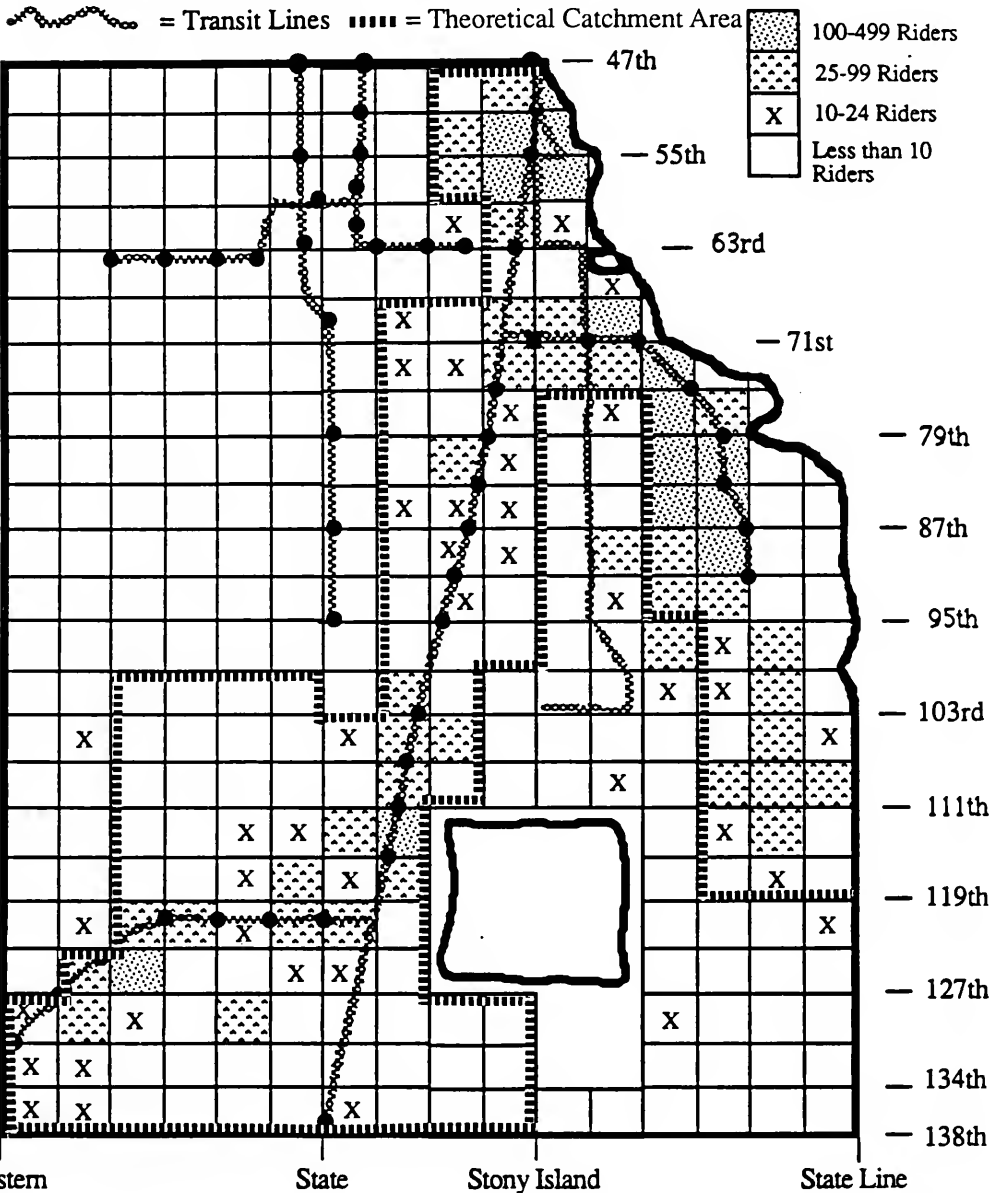
RIDERSHIP BY ORIGIN MILE SECTION

Distribution of Origins of Metra Far South Service Riders



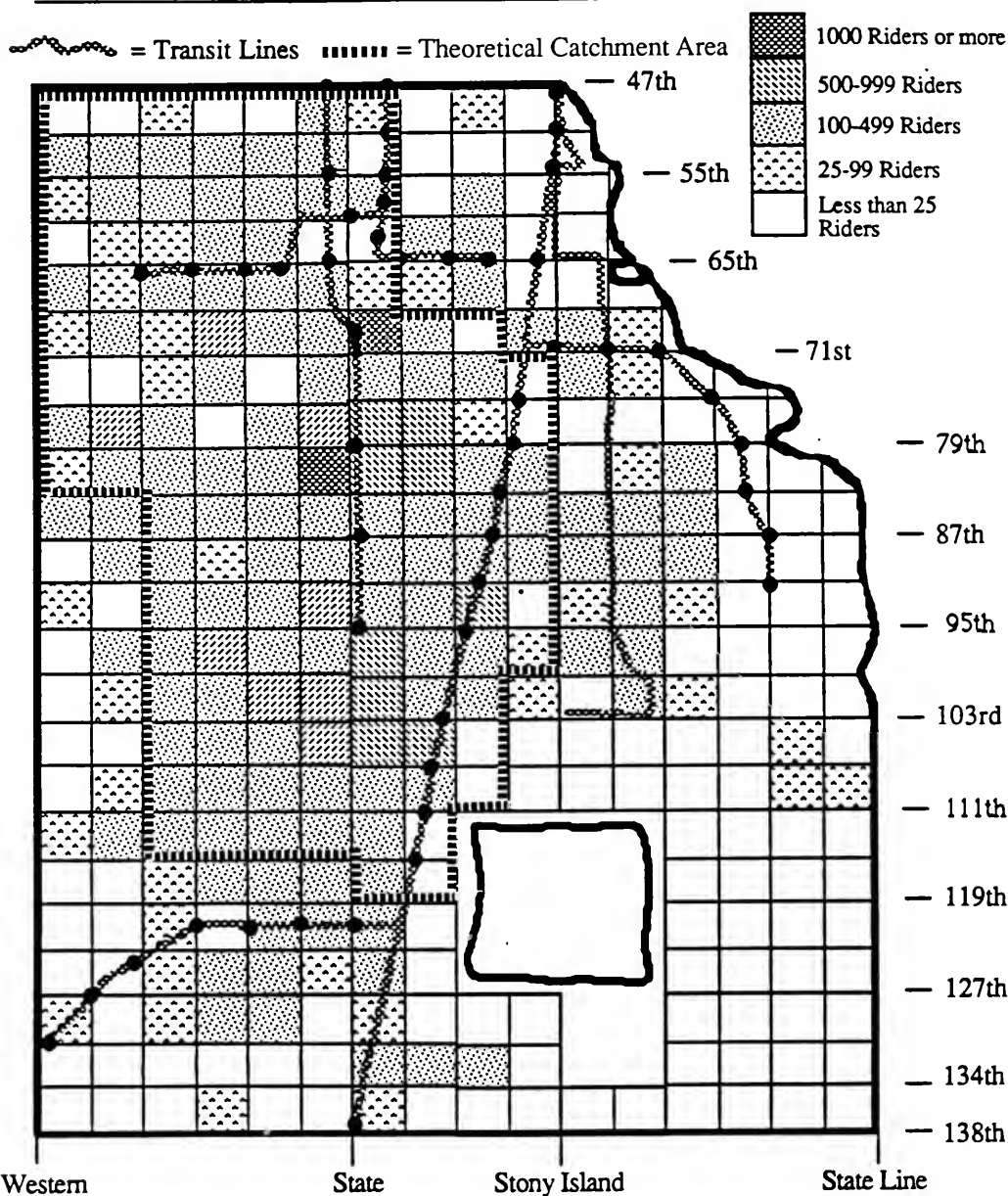
## RIDERSHIP BY ORIGIN QUARTER SECTION:

## Distribution of Origins of Metra Near-In Service Riders



## RIDERSHIP BY ORIGIN QUARTER SECTION:

Distribution of Origins of Dan Ryan Riders



More than 65 percent of Dan Ryan riders access the line by bus, and 23 percent by private auto, consistent with the large catchment area, the line's wide station spacing and its location in a highway median, far from residences. Bus service feeds all Study Area Dan Ryan stations via east-west routes. North-south routes also serve 95th Street Station from points south. The extensive CTA feeder bus network plays a key role in supporting the Dan Ryan's broad market and high ridership.

### Englewood/Jackson Park

The Englewood/Jackson Park Line is second to the Dan Ryan in the number of Study Area riders carried, about half as many, and draws a majority of them from the area north of 71st Street. A large number of riders also reach the Jackson Park branch by feeder bus routes from South Shore and along Cottage Grove, and the Englewood branch by bus along Ashland, Racine, and Halsted. (See Exhibit 2-25)

Like the Dan Ryan, the Englewood/Jackson Park Line gains a substantial portion of its ridership via local bus (50%). In addition, 38 percent of riders access the Englewood/Jackson Park Line on foot, a figure three times as great as on the Dan Ryan. The prevalence of walk access to the Englewood/Jackson Park Line probably reflects the line's closer station spacing and its location in the midst of a dense residential area, with convenient walk access.

### Express Bus

Express bus Routes 6 and 14 account for about 11 percent of Study Area riders travelling to or through downtown on the four primary services, most of whom originate in areas within one mile of the service on Jeffery Boulevard, Stony Island Avenue, and in Hyde Park. Few riders originate from areas west of Cottage Grove. The highest concentrations of express bus riders exist in Hyde Park and near 71st Street, despite the availability of Metra Electric service in these areas (see Exhibit 2-26).

Because of the service's narrow catchment area, express bus riders predominantly walk to the bus (66%), although a significant share (25%) use another bus for access. It is relatively uncommon to find individuals using a local bus to access an express bus. An examination of these riders found the majority to live well beyond typical walk distance for the route (i.e., more than one-half mile), suggesting that the express bus presents an especially attractive alternative for some riders.

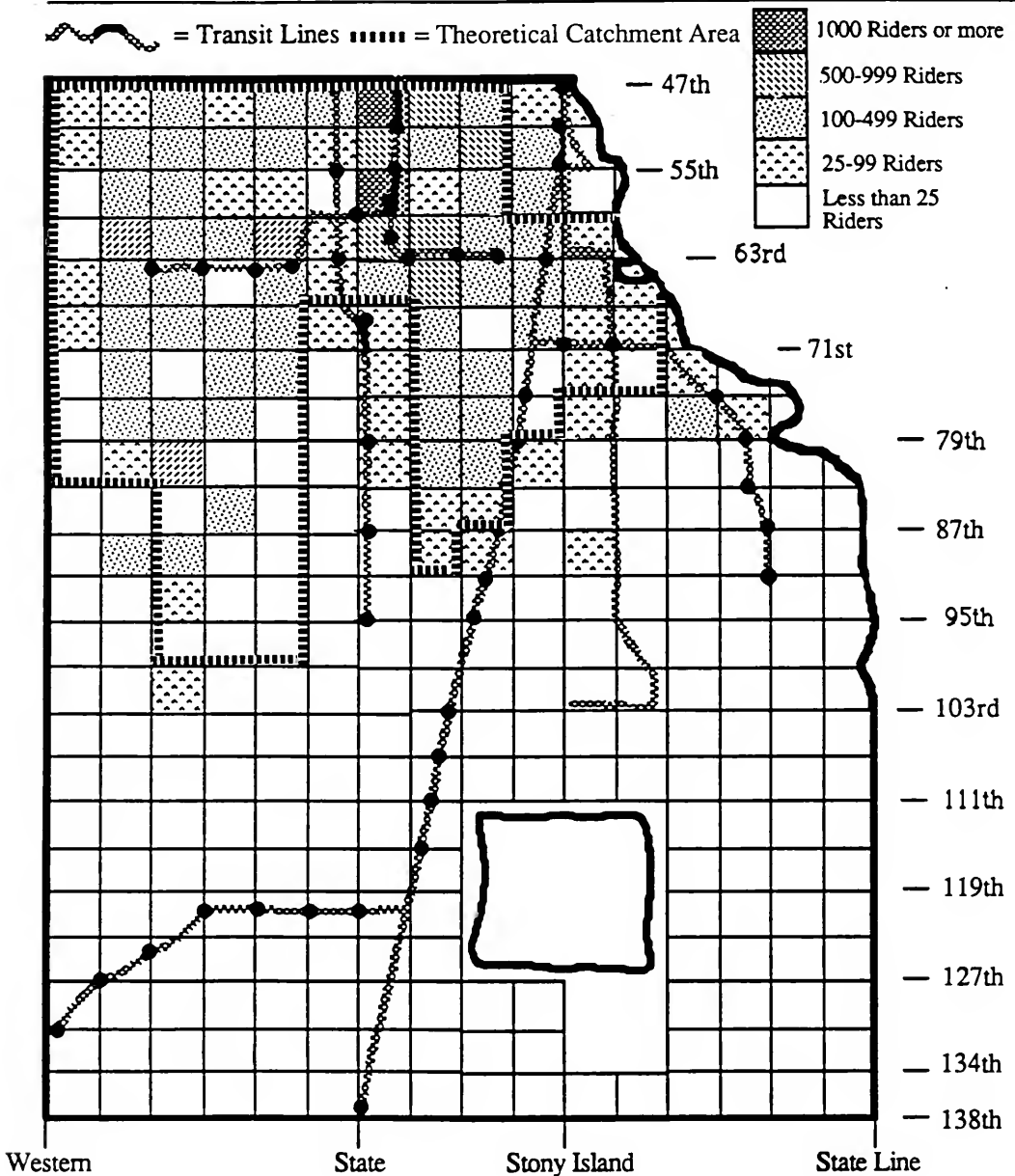
### Catchment Areas

Another definition of a transit service's market can be created using its 'catchment area', the region from which most riders originate. In the Study Area, overlapping catchment areas are of special interest, since several of the transit services there lie within a few blocks of each other. In the suburbs, by contrast, Metra Electric and Rock Island services lie far apart in most places, and have little overlap in their markets, except in Blue Island where the services run very near one another.

Comparison of actual and theoretical transit catchment areas highlights some strengths and weaknesses of the Study Area transit services. Exhibits 2-23 through 2-26 show theoretical catchment areas for each service. As the maps show, overlapping catchment areas exist east of the Dan Ryan Line, north of 63rd Street, and along the Englewood Branch to the west, where the two CTA rail services compete with each other. They also exist east of the Dan Ryan Line south of 63rd Street, where the Dan Ryan competes with Metra Electric, and in both Hyde Park and in South Shore where express bus, Metra Electric, and Englewood/Jackson Park services all compete with each other.

## RIDERSHIP BY ORIGIN QUARTER SECTION:

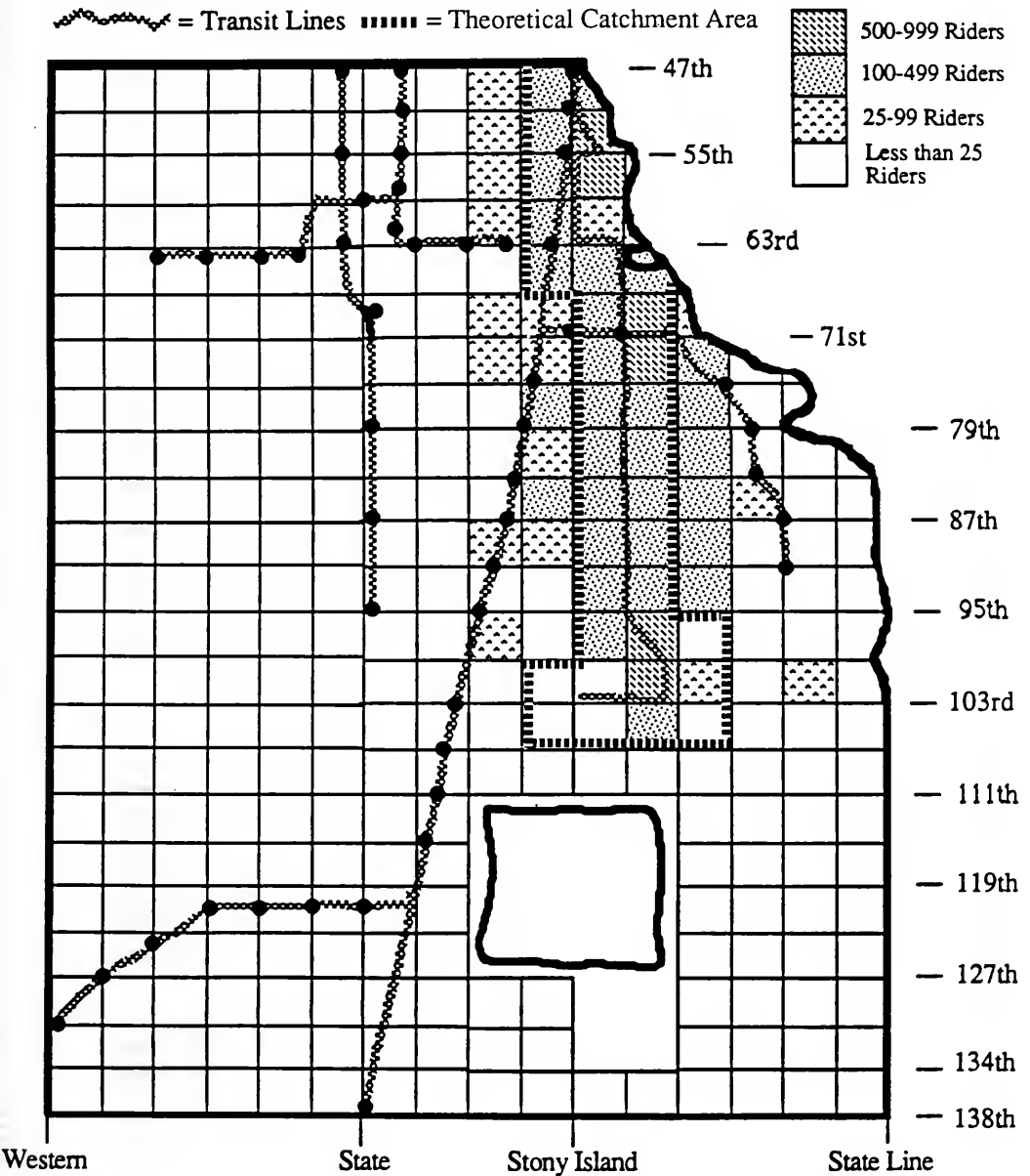
Distribution of Origins of Englewood/Jackson Park Riders





**RIDERSHIP BY ORIGIN QUARTER SECTION:**

Distribution of Origins of Routes 6 and 14 Riders



Actual ridership data from on-board surveys show that the Dan Ryan Line has a very large catchment area extending into what theoretically should be Metra and express bus service areas. Otherwise, actual data reflects the overlap of the theoretical catchment areas. Exhibits 2-23 through 2-26 show the distribution of ridership in comparison to theoretical catchment areas.

Within the Dan Ryan's theoretical catchment area, it has a 70 percent share of riders on the four radial transit services. By contrast, the Englewood/Jackson Park Line achieves only a 44 percent share in its catchment area. For the express bus, the figure is 65 percent, and on the Metra Electric, it varies from 39 percent for the South Chicago branch, to 20 percent for the Blue Island branch, and 8 percent for the Near-In Main Line.

In the South Suburban portion of the Study Area, Metra Electric's primary market area lies mostly to the east of the line, as Exhibit 2-22 shows. Little overlap appears to exist with the Rock Island Line's market area. In fact, few South Suburban riders, under 10 percent of those surveyed, identify the Rock Island as their best alternative to the Electric Service.

#### *2.4.3.3 Trip Destinations*

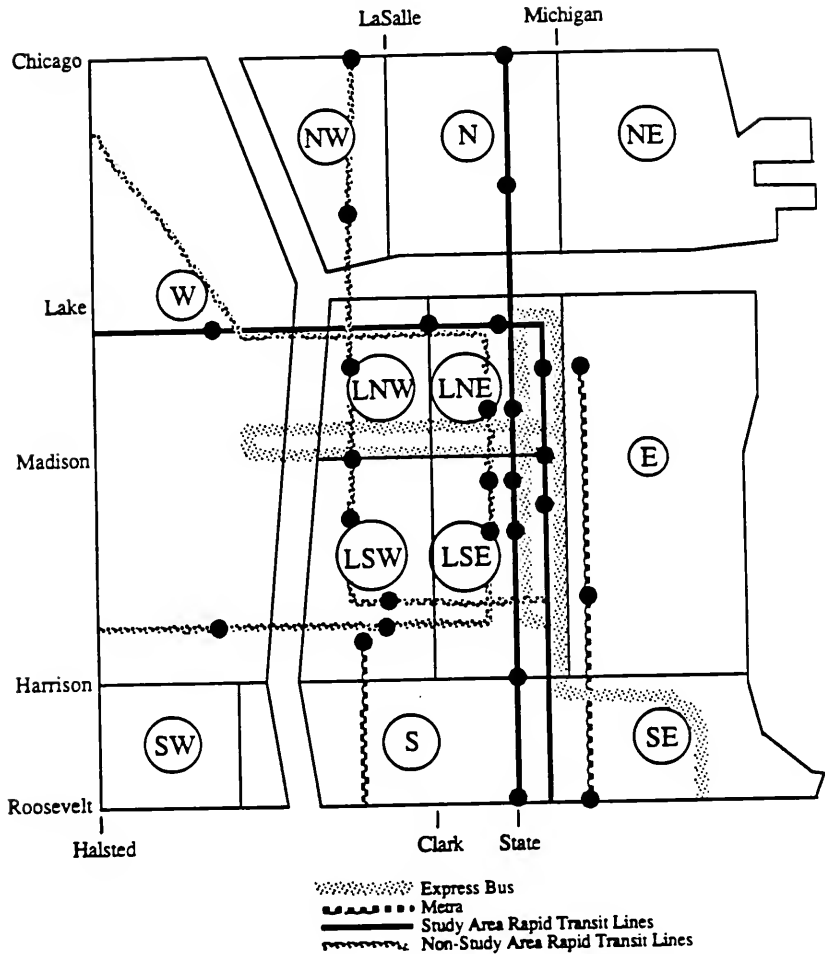
According to the surveys, approximately two-thirds of radial transit riders on the four services studied are destined for the Chicago Central Area, a region bounded by Chicago Avenue, Halsted, Roosevelt Road, and Lake Michigan. Among the four services, Metra Electric Near-In has the greatest percentage of riders (91%) destined to the Chicago Central Area, while the Englewood/Jackson Park Line has the smallest proportion (46%). Exhibit 2-27 shows the distribution of Central Area destinations on all four combined Study Area services. As the figure shows, 70 percent of Central Area destinations (46% of all destinations) are in the four loop zones (bounded by Michigan, Harrison and the river). The largest of these is the southeast, with 23 percent of the Central Area destinations. Other significant destinations are the near west (8%), lakefront (6%), and near north and northeast (5% each). Exhibit 2-27 also shows the same distribution for the four primary Study Area services. Note that the percentages are of Central Area trips only. After alighting from their line-haul mode, the majority of riders on all modes reach their final destinations on foot. The following sections summarize destination and egress data for each service.

#### Metra Electric

Metra has the greatest percentage of riders (91%) destined to the Chicago Central Area. Both Metra Near-In and suburban riders have a pattern of downtown destinations significantly different from riders on other services, since 18 percent are bound for the area east of Michigan Avenue and south of the Chicago River. Destinations are also concentrated in the northeast portion of the Loop, near the Electric Randolph Street terminal, while the relatively remote southwest corner of the Loop has relatively few riders destined there. Comparing destinations of Near-In and suburban riders, one finds a virtually identical distribution, which is interesting since Near-In riders have a greater variety of available transit options. As a result, one might have expected them to choose Metra mostly when they are destined to locations especially near the downtown Electric stations.

Walk egress predominates overwhelmingly among Metra riders, as Exhibit 2-28 shows. Among both Chicago and suburban Metra riders, more than 90 percent walk to their final destination after leaving their commuter train and very few make use of the CTA, which usually requires payment of a separate fare.

Exhibit 2-27  
DOWNTOWN DISTRIBUTION  
OF STUDY AREA RIDERS



Downtown Distribution of Study Area Service Riders

	W	SW	S	SE	E	LNW	LNE	LSW	LSE	NW	N	NE
All Riders	8%	1%	1%	1%	6%	18%	14%	15%	23%	3%	5%	5%
Dan Ryan	9%	1%	0%	0%	6%	19%	16%	14%	22%	4%	3%	5%
Englewood/Jackson Park	8%	1%	2%	3%	2%	17%	10%	13%	28%	1%	12%	3%
Express Routes 6 & 14	6%	1%	0%	1%	5%	15%	13%	25%	22%	2%	4%	6%
Metra Near-In	3%	0%	1%	1%	17%	22%	13%	11%	23%	1%	3%	5%
Metra Suburban	3%	1%	2%	0%	19%	16%	15%	11%	23%	2%	4%	4%

**Exhibit 2-28**

**EGRESS MODE USED BY SOUTH CORRIDOR RIDERS  
(Loop Destinations Only)**

<u>SERVICE</u>	<u>BUS</u>	<u>RAIL</u>	<u>WALK</u>
Dan Ryan	29%	8%	63%
Englewood/Jackson Park	17%	8%	75%
Express Bus	25%	2%	73%
Electric (Near In)	4%	2%	94%
Electric (Far)	4%	3%	93%

## Dan Ryan

On the Dan Ryan line, 73 percent of riders travel between the Study Area and downtown Chicago. Given that the Dan Ryan represents half of the radial trips from the Study Area, it is somewhat surprising that the line's proportion of trips destined downtown differs even seven percent from the average.

Among the modes studied, the Dan Ryan's riders are least likely to access their downtown destination on foot after leaving the train. As Exhibit 2-28 shows, only 63 percent of Dan Ryan riders rely on walk egress, a surprisingly small percentage in comparison to Metra Electric riders, of whom more than 90 percent rely on pedestrian egress.

## Englewood/Jackson Park

On the Englewood/Jackson Park Line, only 46 percent of surveyed riders list a destination within downtown Chicago. Instead, a very high percentage (33%) are headed for destinations north of Chicago Avenue, which receives good service from the Howard segment of the route. Another 9 percent (compared to 5 percent overall) of Englewood/Jackson Park riders travel to areas south of downtown, in the northernmost portion of the Study Area, which is served by 35th Street Station and Roosevelt Station.

More riders on the Englewood/Jackson Park Line reach their final downtown destinations on foot than riders on the other CTA rapid transit service surveyed, with 75 percent among Englewood/Jackson Park riders, in comparison to 63 percent among Dan Ryan riders. Greater reliance on walk egress may reflect a number of factors. For most Dan Ryan riders, who are more likely to access the line by bus (66 vs. 50 percent), there is no additional fare associated with using a bus for egress. Also, the higher operating speeds on the Dan Ryan may make two transfer trips more attractive for some riders than single transfer trips on the slower Englewood/Jackson Park.

## Express Bus

According to the survey, two-thirds of express bus riders are destined for downtown, where destinations are more concentrated in the southwest corner of the Loop, an area not well served by other South Corridor transit services. Express buses also serve the highest percentage of local trips of any of the four near-in services, probably due to the routes' role in the local bus grid system.

Like Englewood/Jackson Park riders, approximately three-fourths of express bus riders reach their final downtown destinations on foot, a reflection of the good service which the express bus provides to the southern Central Area.

## Access vs. Egress Mode

By looking at access and egress modes together, it is possible to assess the number of transfers necessary for trips from the Study Area to downtown. One learns, for instance, that many Dan Ryan riders make two transfer trips, even among those bound for the CBD, while Metra riders, in contrast, rarely transfer to the CTA. On the Dan Ryan, 36 percent of riders use another train or bus at both ends of their ride, and 78 percent use one on at least one end. On the Englewood/Jackson Park line, 23 percent of riders use another mode at both ends of their journey, and 55 percent use another mode for at least one end.

#### *2.4.3.4 Trip Purpose*

Exhibit 2-29 shows that home-to-work trips predominate among all services surveyed, as is common on urban transit systems. Metra and Dan Ryan riders especially reflect the "work-trip commuter" orientation, with more than 85 percent of trips made for that purpose. Home-to-work trips represent 61 percent of Englewood/Jackson Park ridership, and 74 percent of express bus ridership. The Englewood/Jackson Park line, and to a somewhat lesser extent, the Express Bus also have substantial non-work travel. Each has a 12 percent school share and significant "other" purpose shares, particularly on the Englewood/Jackson Park Line.

Among the four services, the Englewood/Jackson Park line serves the highest proportion of non-work trips. Greater non-work trip-making by transit may result from lower employment rates and lower auto availability in the service area, as well as a greater concentration of young people. The Englewood/Jackson Park's immediate surroundings, a densely developed area with commercial activity clustered around the stations, might also explain its greater percentage of non-work trips in comparison to the Dan Ryan line, which runs along a highway median, and has more widely spaced stations.

#### *2.4.3.5 Market Segments Served*

As discussed above, the four transit modes in the Study Area have overlapping service areas and, to some extent, compete for many of the same potential passengers. As a result, a rider's choice of a particular mode over an alternative may reflect consideration of a number of attributes, such as origin and destination of the trip, level of transit service on competing modes, trip purpose, line haul speed, and ease of access and egress. Each transit service has been able to carve out a market niche by providing riders with a particular set of attributes. The segments served by each of the radial services is summarized below.

##### Dan Ryan

Dan Ryan trips are primarily work trips, predominantly made five days a week and very oriented toward downtown Chicago. Riders travel considerable distances to reach the Dan Ryan relying largely on buses and private automobiles to access the line. As a result, transfers are quite common, with more than a third of riders making transfers at each end of their trip. While the Dan Ryan Line provides good circulation to areas west of the Loop, Dan Ryan riders do not seem particularly oriented toward these fringe locations.

##### Englewood/Jackson Park

Englewood/Jackson Park trips include many work trips, as well as considerable numbers of school trips and trips for other purposes. In contrast to Dan Ryan riders, many Englewood/Jackson Park riders use the line infrequently, and travel less often to downtown. Apparently, the two rapid transit lines have split the South Corridor market so that local and through-Loop trip-makers use the Englewood/Jackson Park Line, which provides better access to these destinations, and the majority of downtown trip-makers use the Dan Ryan Line. The Englewood/Jackson Park Line tends to be used more by downtown travellers destined for the area north of the Loop or immediately along State Street. In general, the Englewood/Jackson Park Line has a smaller trip origin catchment area, and attracts more pedestrians than the Dan Ryan Line.

**Exhibit 2-29**

**TRIP PURPOSE CHARACTERISTICS OF SOUTH CORRIDOR RIDERS**

<u>SERVICE</u>	<u>HOME/ WORK</u>	<u>HOME/ SCHOOL</u>	<u>HOME/ OTHER</u>	<u>NON- HOME</u>
Dan Ryan	86.6%	4.6%	5.6%	3.1%
Englewood/Jackson Park	61.3%	12.4%	15.2%	11.1%
Express Bus	73.5%	12.2%	7.8%	6.5%
Electric (Near In)	88.2%	3.8%	4.1%	3.9%
Electric (Far)	85.8%	4.8%	6.3%	3.0%

## Express Bus

The CTA Express Buses serve work, school and other purpose trips, in a pattern somewhat similar to that found on the Englewood/Jackson Park Line. Riders include almost equal shares of infrequent and daily users. Riders primarily access the bus by walking, though a surprisingly large number transfer from other buses; little auto access is evident. Overall, express bus riders are less likely to transfer than CTA rail riders. Like on the Englewood/Jackson Park Line, express bus trips include both downtown and non-downtown trips. Also, express bus passengers not headed downtown tend to be making local trips, a pattern reflecting the strong local service which the express bus provides in much of the Study Area. Downtown express bus riders are more oriented to the southwest corner of the Loop, which it serves better than other modes.

## Metra

Metra Electric trips are very work-oriented, but with a mix of both frequent and infrequent users. Metra trips have a heavy downtown orientation, with destinations clustered around Randolph Street Station. Almost all riders walk to their destination, some walking as much as a mile. Most Near-In users also walk between their homes and Metra stations in the Study Area, though some do use automobiles. Suburban Metra riders tend to live further from the station and most often drive to the trains. Lack of fare integration probably inhibits transfer to CTA and Pace bus services for either access or egress.

## **2.5. COST EFFECTIVENESS OF RADIAL SERVICES**

Comparison of cost effectiveness measures provides a means to assess how well limited resources are allocated. In the South Corridor, cost-effectiveness has been examined using a comparison of productivity and cost per rider on Study Area radial services with CTA and Metra system averages. In general, some Study Area services compare favorably with system averages, while other services compare unfavorably. Tables of cost-effectiveness measures are contained later in this section.

### **2.5.1. Productivity Measures (passengers per unit of service)**

Among the four primary radial Study Area transit services, the Dan Ryan line exhibits highest overall productivity. The Metra Main Line and South Chicago Branch also exhibit fairly high overall productivity, even exceeding the Dan Ryan according to some vehicle-based measures, though not according to other, train-based measures. The remaining Study Area services all demonstrate much lower productivities. The Englewood/Jackson Park Line and Blue Island Electric line each can be considered the least productive, depending on how productivity is measured. It should be noted that the high frequency service requirement of the Howard Line, with which the Englewood/Jackson Park Line is interlined, has a negative impact on the Englewood/Jackson Park's productivity.



In addition to ranking first in productivity among the three Electric branches, the Main Line outperforms Metra system-wide productivity<sup>12</sup>. The South Chicago branch also exceeds system-wide averages for most productivity measures, though not in the case of passengers per train hour, where slow service speeds and short trains cause the branch to lag behind system-wide averages. Blue Island service, on the other hand, has the lowest productivity of any service in the Metra system with regard to several measures.<sup>13</sup>

Within the Electric system, productivity varies significantly among the three branches, with the relative ranking of the services depending on the particular productivity measure used (see Exhibit 2-30). Suburban Main Line service ranks first using train-based measures, followed by South Chicago, then Blue Island services. Measured on a per car-hour basis, however, suburban service has a less commanding lead in productivity, since suburban Main Line trains have more cars than the shorter branch line trains. Measured in terms of car-miles instead of car-hours, suburban Main Line service actually loses its productivity lead to South Chicago service, since the mile-based measure does not reflect the higher service speeds on the Main Line.

Comparing the two Study Area rapid transit lines with the average productivity of the CTA rail system, one finds that the Dan Ryan significantly outperforms the system-wide average, while the Englewood/Jackson Park significantly underperforms it. The poor performance of the Englewood/Jackson Park Line appears to result, in part, from the frequent service requirement on the Howard Line of the same North-South route. The soon to be completed Howard-Dan Ryan Connector will pair the Englewood/Jackson Park Line with the lower volume Lake Line, thereby allowing service levels on the Englewood/Jackson Park Line to be reduced, potentially increasing its productivity and that of the CTA rail system as a whole. The implications of the Howard-Dan Ryan Connector on future productivity is discussed in section 3.4.

As a whole, South Lakeshore Express bus service exhibits productivity similar to the CTA express bus average, though productivity differences exist between the two routes comprising the Lakeshore Express. Examining Routes 6 and 14 separately, one finds that Route 6 performs better on a per vehicle-mile basis. Measured on a vehicle-hour basis, however, the performance of the two routes is reversed, due to higher average speeds on Route 14.

Comparing express bus service with rail service in the Study Area, one finds that the buses move more passengers per vehicle-mile than the Englewood/Jackson Park but somewhat fewer per vehicle-hour, possibly due to slower speeds in mixed right of way. In comparison to the South Chicago Line, which they parallel, the bus routes carry fewer passengers per vehicle-hour and per vehicle-mile, which probably reflects the smaller capacity of CTA buses in comparison to Metra coaches.

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<sup>12</sup> The productivity measures have been developed using weekday ridership data and service supply information.

<sup>13</sup> Note that Blue Island service includes riders from Near-In Main Line stations, as does South Chicago service as well.

## PRODUCTIVITY MEASURES

SERVICE	PASSENGERS PER REVENUE			
	CAR		TRAIN	
	MILE	HOURL	MILE	HOURL
Dan Ryan	4.76	116.7	23.96	588
Englewood/Jackson Park	2.58	45.8	13.57	241
CTA RAIL SYSTEMWIDE	3.26	75.1	15.65	361
Electric Main Line	3.89	122.7	15.53	490
Electric Blue Island	3.07	72.8	6.59	157
Electric South Chicago	5.77	119.0	14.51	299
METRA SYSTEMWIDE	3.18	101.6	13.14	415

SERVICE	PASSENGERS PER REVENUE VEHICLE	
	MILE	HOURL
<u>Express Bus:</u>		
Route 6	3.22	39.9
Route 14	2.83	44.2
Routes 6 & 14	3.07	41.4
ALL CBD EXPRESSES	3.40	42.6
BUS SYSTEMWIDE	5.05	52.0

### 2.5.2. Operating Cost Per Rider

Operating costs were compared on a per-rider basis as a measure of cost effectiveness. These measures indicate that the Dan Ryan Line and the express buses (in particular, Route 6) provide the most cost-effective Study Area radial transit service. The Dan Ryan also has a lower than average cost relative to the CTA rail system, while the South Lakeshore Express has costs per rider that are similar to the overall CTA express bus average. The Englewood/Jackson Park Line and the Blue Island Branch have very high operating costs per rider, which in both cases, are higher than any comparable services.

Comparing the two CTA rapid transit lines, one finds that the Dan Ryan Line carries its riders at less than half the cost per passenger of the Englewood/Jackson Park line. While Dan Ryan operating costs are \$1.49 per rider, Englewood/Jackson Park costs are \$3.25, and, system-wide, rail averages \$1.76.<sup>14</sup>

Considered together, CTA express bus service in the Study Area has operating costs virtually identical to the system-wide express bus average of \$1.73 per rider.<sup>15</sup> Considered separately, Route 6 costs slightly less than the average, while Route 14 costs slightly more because, unlike Route 6, it has no off-peak ridership to help support the vehicles needed for peak service. It is interesting to note that express bus costs per rider are quite similar to CTA rail services' average operating cost per rider.

The Electric service is less efficient than the Metra commuter rail system as a whole in terms of the cost of serving passengers. Metra operating costs are reported to be \$4.63 per rider on the Electric services vs. a system average of \$3.73.<sup>16</sup>

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<sup>14</sup> Operating cost per rider has been computed using service board operating cost models. The CTA has three point cost allocation models for rail and bus. All CTA costs are allocated to modes and to three variables -- peak vehicles, vehicle hour and vehicle mile. These variables do not distinguish between different types of service within a modal category. For example, elevated rail lines may have greater maintenance costs than at-grade rail lines, yet the model uses an overall average of maintenance of way costs for the rail mode. Similarly, express bus service usually has a different cost structure than local bus, since express buses may deadhead on return trips. Nevertheless, the CTA models were used to develop a cost estimate for the purpose of measuring costs per rider. Furthermore, in order to establish a common basis for comparing modes, the fully allocated operating cost has been prepared with and without the depreciation on right-of-way.

<sup>15</sup> Local buses average \$1.14 per rider.

<sup>16</sup> Metra does not have a similar three point cost model but has in a recent analysis used a simple cost per car mile. This method of operating cost estimation was employed here as well. It should be recognized that the two methods are somewhat inconsistent. If all Metra services averaged similar speeds, train lengths and peaking, this method of cost estimation might be satisfactory, but this is not the case. It is outside the scope of this effort to derive a new cost model. Two adjustments, however, were made in estimating Metra costs. First, depreciation on cars was added to make the cost more comparable to CTA costs. Second, total car miles rather than revenue car miles were used to reflect the cost of deadheading on some of the Metra services.

It is difficult to compare Metra operating costs to those of the CTA services, since Metra cost estimates omit depreciation of vehicles. Vehicle depreciation has been estimated and added to the operating cost per mile to derive a more comparable figure. Doing so, it appears that the Blue Island is the most costly of Study Area radial services, with per rider costs of \$7.30. The Main Line has the next highest cost, \$5.45 per rider. Of course, comparing rapid transit and commuter rail service may be specious since average trip length on the Metra system is longer than on CTA. Even within-Metra comparisons with a cost per rider measure are difficult due to the different amounts of freight usage on the various lines, which shares the maintenance of way costs.

### 3. FUTURE CONDITIONS

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Adapting transit service to changing transit markets requires careful prediction of long-term future conditions, for two major reasons. The first reason is that transit infrastructure has a very long lifespan, meaning that planned changes to the system should be justifiable in the future as well as the present. The second reason is that long lead-times are usually necessary when planning changes to transit infrastructure, since construction projects often require years to complete and are frequently preceded by an even more lengthy planning, decision-making, and design process.

In analyzing future conditions in the Study Area, 2010 has been chosen as the target year, in keeping with generally accepted planning practice. Several transit infrastructure improvements, as well as considerable changes to Study Area communities, are expected to occur between now and 2010. As a hedge against the uncertainty involved in predicting the future, the study has conducted a ridership sensitivity analysis using three different demographic scenarios for the Study Area.

#### 3.1. COMMUNITY CHARACTERISTICS

By the year 2010, significant changes to Study Area communities are expected to occur, especially with respect to population and land use. Downtown Chicago is expected to grow significantly in terms of geographic area, floor space, and employment. In the Study Area, south of the Chicago Central Area, the net effect of changes to the built environment is less clear. Though a number of projects are planned, particularly in the northern part of the Study Area, little overall change is expected. Population is projected to increase in the Study Area, to 1.6 million and, for the first time in decades, more growth is expected to occur in the City of Chicago than in the south suburbs.

##### 3.1.1. Land Use Changes

Except for the Central Area and areas immediately south of it, few major changes in land use are anticipated or proposed for much of the South Corridor between now and the year 2010. The one proposal that could significantly alter land uses would be the construction of a third Chicago Regional Airport in or near the Study Area.

##### 3.1.1.1 Development Trends

Except for the Chicago Central Area and immediately adjacent communities, little information exists about expected changes in Study Area land use between now and the year 2010. While a few proposals exist that may be built in the Study Area in the next few years, there has been no comprehensive look at long-term future land use. NIPC's 2010 regional forecasts provide some sense of expected shifts in commercial activity, although they tend to reflect only general shifts in activity, and not the impact of any specific developments or development programs.

Given the limited data available, only some general conclusions can be reached about 2010 land use in the Study Area outside the Chicago Central Area.

Somewhat detailed projections of land use changes are available for the Central Area. Office space in downtown Chicago has doubled in the last twenty years, rising to 116 million square feet. The Chicago Department of Planning's projections of the growth in downtown commercial space, cited in the Chicago Central Area Circulator feasibility study, indicate that the rate of growth in floor space seen in recent decades is expected to sustain itself at least until 2010, with annual increases of 2.5 to 3.0 million square feet and an overall growth of almost 50 percent. Such large-scale development would be expected to significantly impact radial travel patterns.

The area around the Chicago Loop is expected to absorb the lion's share of new floor space, though the remainder of the downtown will sustain significant increases as well. By 2010, the Loop area, bounded by the Chicago River, Michigan Avenue, and Congress Street is expected to grow by 34 million square feet, while the Near-North and River North areas, bounded by the river, Chicago Avenue, Wabash, and Oak Street will gain 11 million square feet. West of the Chicago river, the area bounded by Congress Street, Interstate 90-94, and Fulton Street will absorb 10 million square feet of new floor space, while the area south of the Loop, bounded by Congress Street, Michigan Avenue, Roosevelt Road, and the river is expected to grow by 3 million square feet.

South of the Central Area, in the Near South Community Area, proposed developments could add significantly to the existing floor space. The area, now largely filled with vacant and under-developed land, including many former rail yards, is expected to develop significantly in the next 20 years as the downtown expands southward. Approximately 9.7 million square feet of new office space and 4.4 million square feet of new retail space is planned by 2010. Much of the growth is expected to result from the Central Station project, which is expected to add 7.2 million square feet of office and 1.0 million square feet of retail space. Substantial growth in residential and hotel space is also planned, with up to 9,500 residential units on the drawing board for Central Station. Other proposed developments include McCormick Place expansion, Dearborn Park II, the CSX property, and the Chinatown expansion.

In the rest of the city portion of the Study Area, only a few relatively small development proposals can currently be identified. These mostly consist of the revitalization of blighted commercial areas and abandoned housing. These proposals include, among others, improvements to the commercial areas at 63rd & Halsted and at 71st & Jeffery plus renovations to the housing stock in the Kenwood-Oakland area. None of the proposals are expected to change the overall pattern of land use in the Study Area although they could affect the relative densities of specific areas. Throughout much of the study area, there is a substantial amount of abandoned and under-utilized commercial and residential land that could be developed, without changing overall land use patterns, but nevertheless restoring densities towards their previous levels. Conversely, there may be continued deterioration and abandonment of housing and commercial space in many areas that would reduce density. Either way, little change should be expected in the locations of residential and commercial areas in this part of the study area. Little change is also likely in the amount of land dedicated to other uses such as institutions, transportation, and parks.

In the suburban portion of the Study Area, where significant areas of undeveloped land still exist, new industrial and commercial development is expected to continue. Reflecting the

recent trend of Chicago area employment to shift to the Central Area and to the suburbs, most new development in the south suburbs is likely to locate in the southern and western townships of Rich and Monee, generally west of the Metra Electric right-of-way. Current South Suburban development proposals focus on the I-57/Cicero corridor in that area, particularly in the municipalities of Matteson and Richton Park. The older townships to the north and east are expected to remain stable or decline slightly in coming decades. The increasing concentration of employment in these two areas supports forecasts of increasing radial trip-making in the Study Area.

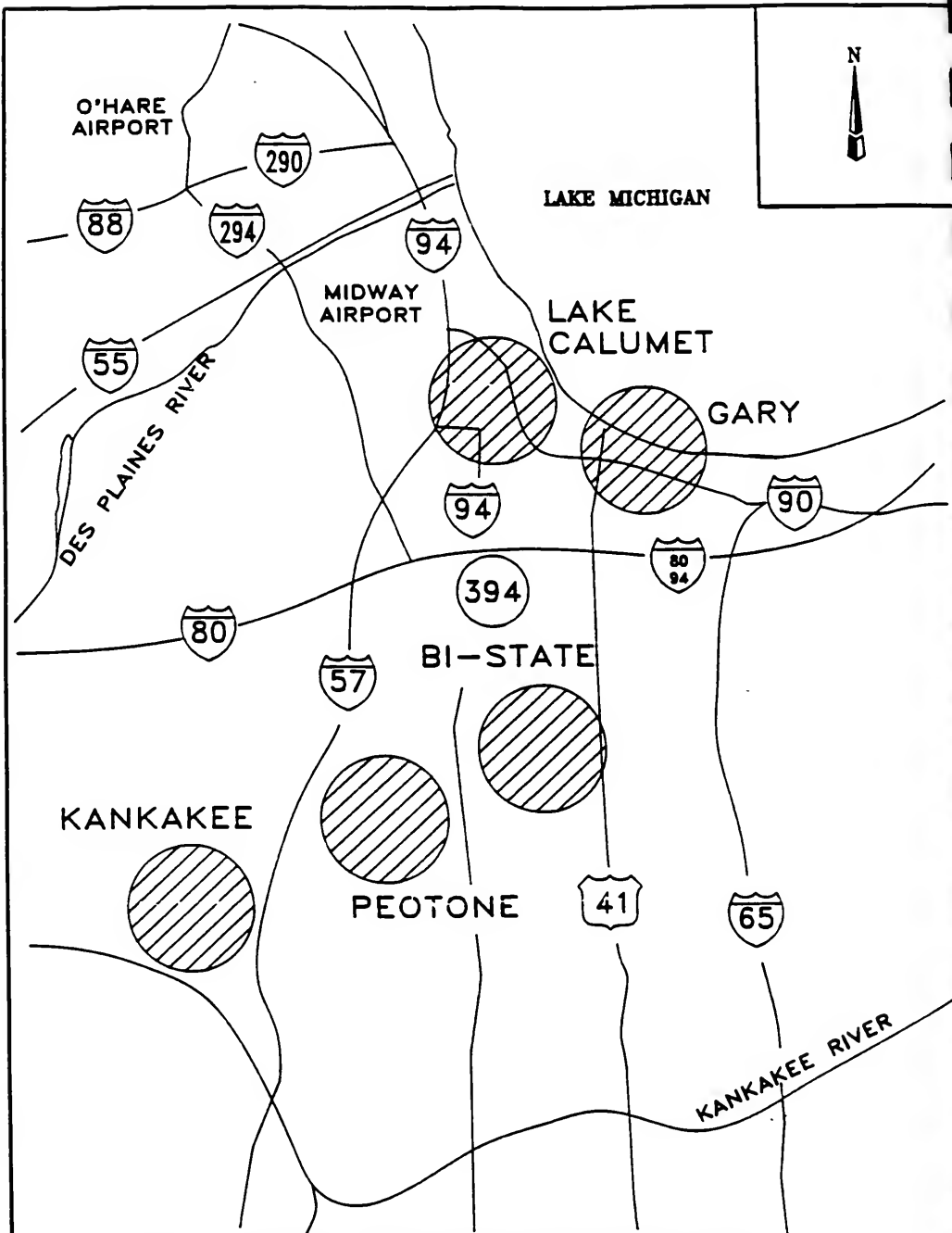
### *3.1.1.2 Third Regional Airport*

Land uses in the South Corridor would be likely to change substantially if a third regional airport were located in or near the corridor. A new airport could produce a development pattern similar to that seen around O'Hare International Airport and other major new airports around the country. Under this type of scenario, airport related land uses would cluster immediately around the airport, while other, airport dependent businesses locate nearby. Only one (Lake Calumet) of the five proposed sites for a new airport actually lies within the Study Area, though all but Kankakee are located within about five to ten miles of the Study Area (see Exhibit 3-1).

The Third Regional Airport Study of potential sites has been ongoing during the course of the South Corridor Study. Though the scope of the South Corridor Study does not include detailed analysis of impacts of a new airport on the Study Area, airport study results will be incorporated as they become available. One can postulate that numerous major land use changes would occur. For instance, a third airport is likely to induce changes in land use in the corridor between the Airport and downtown Chicago. Commercial development is likely to be greater along the major highways connecting the airport to Chicago, such as I-57, I-94, or I-90, since there would likely be demand for space that is convenient to both the downtown and the new airport. This could result in substantial increases in developed floor space in now largely under-utilized industrial areas along these highways in the city. If one of the three suburban Illinois sites is chosen, undeveloped land in the suburbs could be developed for commercial use.

The large amount of available commercial and industrial zoned land in the city portion of the South Corridor near the interstate highways is likely to limit pressure to convert residential land to accommodate expected commercial growth in all but the immediate airport vicinity. Further from the highways, the impacts of the airport will be less direct. The increased economic activity and employment potential might attract new residents and businesses to the Study Area. In the city portion of the Study Area, and in the older suburbs, this new development will likely occur through increased densities in areas that have declined in recent decades with little pressure to change the types of existing land use. In the newer parts of the South Suburban Area, new development could occur in currently undeveloped areas.

The changes in land use associated with a new airport could have significant impacts on travel in the South Corridor. Increasing employment opportunities at the airport coupled with service changes could result in increased transit travel and change overall travel patterns in the corridor.



SOURCE: ILLINOIS - INDIANA REGIONAL AIRPORT STUDY

ALTERNATIVE AIRPORT SEARCH AREAS



### **3.1.2. Demographic Changes**

**By 2010, the population of the South Corridor Study Area is projected to grow to 1.6 million people, according to official 1988 Northeastern Illinois Planning Commission (NIPC) estimates.**

#### ***3.1.2.1 Population***

Between 1960 and 1990, the Study Area has lost 12.5 percent of its total population, with most of the net loss occurring during the last decade. However, during the next twenty years, NIPC forecasts, which were made during the late 1980's, suggest that the loss will soon reverse itself. The result, according to NIPC, will be population growth of 14.3 percent that will restore the Study Area total to within two percent of the 1960 total of 1,594,000.

According to the NIPC projections, the Chicago portion of the Study Area will grow by 15.0 percent between 1990 and 2010, while the suburban area will grow slightly less, by 13.0 percent. Almost all of the community areas projected to decrease in population by 2010 are located near the Chicago Southern border, an area which showed decades of steady growth until the 1980's. The modest declines projected for this area may reflect shrinking household size among an aging population.

The NIPC forecasts are the official forecasts of the region and appear to be the best basis for projecting future transit travel. Sensitivity analysis, discussed in Section 3.1.3, was programmed into the study to allow for uncertainty inherent in any projections of the future. Some of the 1990 Census results appear to be at variance with the trends implied by the official projection. It should be noted that in December 1990, NIPC issued a set of revised 2010 forecasts which were not included in this analysis. This revision did not have the benefit of 1990 census data and did not change any forecasts for the City of Chicago. Within the six suburban Study Area townships, the 2010 population forecast was reduced by 15,000 or 2.5 percent. Another revised NIPC forecast is anticipated after analysis of the census data, to be followed by a new set of forecasts in 1994.

#### ***3.1.2.2 Racial and Ethnic Groups***

NIPC does not forecast population by race. The Chicago Department of Planning has developed city-wide projections for 2010. These projections indicate that whites, Asians, and American Indians, who are grouped together in the City's projections, will comprise 32.4 percent of the total in 2010. Non-Hispanic blacks are expected to make-up 43.7 percent and Hispanics 23.9 percent of Chicago's population in 2010. These forecasts were made prior to the 1990 Census.

### **3.1.3. Economic Development Scenarios for Transit Ridership**

The complex process of estimating the factors that influence trip-making involves several elements of uncertainty. Because of this uncertainty, it is often more effective to analyze alternative scenarios that allow the assessment of sensitivity to alternative projections. In the case of the South Corridor Study, the sensitivity of projected 2010 transit ridership to alternative socioeconomic factors has been examined. Two alternatives to the official NIPC Base Case scenarios have been developed. They both assume only incremental differences from the base case. A radically different scenario, which would assume a new airport in the Study Area, was not developed

because the proposed economic development impacts were not available from the Chicago Third Regional Airport Study at the time of this analysis.

### *3.1.3.1 Development of Scenarios*

The study scope called for consideration of three alternative economic development scenarios, each based on different future assumptions about changes in population and employment. In addition to a base, or most likely, scenario, an optimistic and a pessimistic scenario have been examined. These two scenarios represent more extreme visions of the future, yet would still be within the realm of possible futures. Furthermore, these scenarios represent cases that would be more optimistic and pessimistic for transit ridership on the four radial South Corridor transit services, and not necessarily the most optimistic and pessimistic cases for South Corridor economic development.

Several public agencies have, for their own use, created economic development scenarios for the City of Chicago and the entire region. In addition to the official NIPC forecasts, the CTA, RTA, and City of Chicago have all developed alternative, but less detailed, population and employment scenarios for the areas covered by this study. The CTA and RTA each developed multiple scenarios for use in their strategic planning efforts. While NIPC projects population for the City of Chicago of 3.16 million in 2010, the other scenarios range from 2.88 million to 3.34 million. NIPC's 2010 employment projection for the city of 1.68 million also falls between the other scenario's pessimistic forecast of 1.39 million and optimistic forecast of 1.82 million. The percentage of total city employment that is projected for the Central Area ranges from 45 to 50 percent with the NIPC figure of 48 percent in between.

NIPC's official 1988 projections are used as the 2010 Base Case Scenario. It was decided that none of the existing alternative scenarios adequately represented a more optimistic or more pessimistic case. New optimistic and pessimistic scenarios were developed, using parts of the existing scenarios with some modifications, though not incorporating 1990 census data, which was not yet available.

### *3.1.3.2 Pessimistic Scenario*

The pessimistic scenario assumes a situation where little population growth, from the 1985 estimated levels, occurs and is mostly limited to the suburbs while the city portion of the Study Area shows a slight decline. A small growth in employment occurs in the Central Area and in the suburbs, with losses in the rest of the city. The pessimistic scenario, developed prior to the release of 1990 Census data, was intended to represent a lower bound on possible futures.

As Exhibit 3-2 shows, total Study Area 2010 population under the pessimistic scenario is 1,560,722. This level is two percent less than the NIPC Base Case, and approximately 12 percent higher than the 1990 census. At the community level, the pessimistic scenario's population total is distributed in a manner which makes the largest reductions from the Base Case in those communities where the highest growth has been projected.

The pessimistic employment totals for the Central Area of 656,000 are 4.7 percent higher than the 1985 estimated level, and 19 percent below the Base Case forecast for 2010. Study Area employment, outside the Central Area, is assumed to be 386,000, essentially equal to 1985 levels.

	1980	1985	2010 Pess.	2010 NIPC	2010 Opt.	2010 Pess.	2010 NIPC	2010 Opt.	versus 1985	versus NIPC 2010
Population										
Region	7,103,624	7,273,437	7,801,909	8,181,000	8,508,240	7.3%	12.5%	17.0%	-4.6%	4.0%
City of Chicago % of Region	3,005,072	3,007,607	3,007,607	3,155,000	3,335,000	0.0%	4.9%	10.9%	-4.7%	5.7%
	42.3%	41.4%	38.5%	38.6%	39.2%					
City South Corridor	1,049,162	1,031,547	1,010,446	1,027,190	1,122,461	-2.0%	-0.4%	8.8%	-1.6%	9.3%
% of Region	14.8%	14.2%	13.0%	12.6%	13.2%					
% of City	34.9%	34.3%	33.6%	32.6%	33.7%					
Suburban South Corr.	526,846	527,507	550,276	566,319	592,920	4.3%	7.4%	12.4%	-2.8%	4.7%
Employment										
Region	3,401,400	3,445,500	3,656,133	4,171,000	4,379,550	6.1%	21.1%	27.1%	-12.3%	5.0%
Jobs/person	0.479	0.474	0.469	0.510	0.515					
City of Chicago	1,583,000	1,497,600	1,454,070	1,682,800	1,819,000	-2.9%	12.4%	21.5%	-13.6%	8.1%
% of Region	46.5%	43.5%	39.8%	40.3%	41.5%					
Central Area	579,421	626,368	655,631	811,295	900,000	4.7%	29.5%	43.7%	-19.2%	10.9%
% of Region	17.0%	18.2%	17.9%	19.5%	20.6%					
% of City	36.6%	41.8%	45.1%	48.2%	49.5%					
City South Corridor	271,241	240,957	222,562	242,929	256,168	-7.6%	0.8%	6.3%	-8.4%	5.4%
% of Region	8.0%	7.0%	6.1%	5.8%	5.8%					
% of City	17.1%	16.1%	15.3%	14.4%	14.1%					
Suburban South Corr.	144,496	142,582	163,400	184,632	190,001	14.6%	29.5%	33.3%	-11.5%	2.9%

### *3.1.3.3 Optimistic Scenario*

The optimistic scenario assumes a situation where both population and employment increase significantly, though in both cases, growth is distributed unevenly throughout the metropolitan area. For the optimistic scenario, a somewhat centralized -- more favorable to transit -- pattern of growth was assumed. This results in a total Study Area population of 1,715,381, which is 7.7 percent higher than the Base Case 2010 forecast and 23 percent higher than the 1990 census.

The optimistic employment totals of 900,000 for the Central Area is 11 percent higher than the Base Case 2010 forecast and represents a 44 percent increase over 1985 estimated levels. Optimistic Study Area employment of 446,000 is 16 percent higher than 1985 estimates.

## **3.2. TRANSIT SYSTEM IMPROVEMENTS**

A number of improvements to the transit system are currently underway, programmed, or undergoing detailed planning. Major committed improvements have been incorporated in this study. These and other improvement proposals which impact the Study Area are summarized.

### **3.2.1. Committed Improvements**

Capital improvements which are already programmed in the Study Area are significant. Over the past years, the City of Chicago has programmed approximately \$700 million of federal Interstate Transfer funds to enhance transit services in or adjacent to the Study Area. More than \$100 million in track, station, yard and garage improvements have been or will be programmed by the CTA and Metra in the Study Area. In addition, Metra has completed \$14 million of rehabilitation work on the Electric Line's two downtown stations and will rehabilitate its Electric Line Multiple Unit cars at a cost of more than \$100 million.

#### *3.2.1.1 Southwest Transit Project*

Scheduled for completion in late 1992/early 1993, the Southwest Transit Project (SWTP) is a \$407 million, nine mile rail project on Chicago's southwest side. This project is currently under construction by the City of Chicago and is to be operated by the CTA. The new line will link the existing nine stations on the Loop Elevated with eight new stations (roughly paralleling Archer Avenue) and terminate at Chicago's Midway Airport. When completed, this line will replace express bus with rail transit service, reducing travel times from the southwest to the central area from more than 40 minutes to 25 minutes.

With regard to existing bus services in this corridor, CTA expects to restructure Stevenson Expressway and Archer Avenue service to provide more feeder service to the outer ends of the rail line. CTA estimates that it will reduce the number of peak hour buses in operation by 80. Rail service is expected to be provided with 6 minute headways in the peak period.

### *3.2.1.2 CTA Howard/Dan Ryan Connector*

This \$160 million project which will result in a re-alignment of the CTA's North-South and West-South lines. Construction of a new mile-long tunnel linking the Dan Ryan line at the Cermak station with the Howard line at the State/Roosevelt station is virtually complete, and the re-alignment is expected to occur in summer 1992. When complete, this project will connect two CTA lines which currently carry 40 percent of the system's ridership, and permit more balanced railcar assignments and service levels.

With the re-routing, CTA will increase the number of cars operating on the new Howard/Dan Ryan alignment during peak periods. The re-routing will reduce the overall travel time from 95th Street to the central area modestly, and it will provide Dan Ryan riders with better access to the southern portion of the Central Area. Four Dan Ryan stations will experience increased frequencies, due to conversion from skip-stop to all-stop operation. Simultaneously, the Lake line and the Englewood/Jackson Park lines will be linked as an all-elevated route. CTA expects to reduce the number of cars in service on the Lake-Englewood/Jackson Park Line, by using six car consists instead of eight car trains in the peak.

### *3.2.1.3 CTA Jackson Park Branch Improvements*

Using \$31 million of federal Interstate Transfer and State bond funds, the City of Chicago is in the process of constructing, reconstructing and rehabilitating the Jackson Park Branch. In essence, the project consists of the demolition of the easternmost portion of the elevated structure and construction of a new section of track linking the remaining structure with a new terminal complex at Dorchester; and the reconstruction of the King Drive and Cottage Grove stations. The new terminal complex will be an inter-modal facility, providing direct access to both the 63rd Street Electric station and CTA bus services, as well as parking and drop-off facilities.

Demolition and reconstruction of the eastern portion of the structure and the Cottage Grove station have been completed. Design work on the Dorchester Terminal Complex (61st and Woodlawn) and the King Drive Station (King and 61st) is complete. Construction of the King Drive Station has commenced, while the Dorchester Terminal Complex project should be bid in late 1991. CTA is undertaking elevated structural repair work west of Kimbark.

### *3.2.1.4 Other CTA Rail Improvements*

The City has programmed nearly \$130 million in federal Interstate Transfer and State bond funds on Loop-elevated structure and station improvements. By the time this project is completed in 1995, about three-quarters of the funds will have funded structural work, with the remainder dedicated to station improvements.

CTA is currently in the process of replacing flange angles and foundations on the Southside Mainline at a cost of more than \$45 million. This project is expected to be completed by 1994. Mainline station improvements that are currently underway or recently completed include a \$4.5 million improvement project at the Indiana station and a \$1.4 million improvement project at the 43rd Street station. Dan Ryan rail improvements that are underway or recently completed will cost more than \$9 million.

The three CTA rail yards that are included in the near-in Study Area include the 61st Street yard, the Racine yard and the 98th Street yard. In conjunction with the Howard/Dan Ryan Connector project, the 98th Street yard was recently expanded within the Calumet Expressway right-of-way at a cost of \$10 million to provide additional capacity for the re-routed line. This

work included new track, traction power and train control systems. The 61st Street yard will also undergo track and structural work in 1992 at a cost of \$3.7 million.

CTA will also be accepting delivery of 256 rail cars costing nearly \$250 million over a two year period commencing in 1992. This includes \$86 million of cars purchased for the Southwest Transit Project with Interstate Transfer funds.

#### *3.2.1.5 CTA Bus Improvements*

Three of the CTA's nine active bus garages are located in the Chicago Study Area, in addition to the CTA's one heavy repair shop facility, the South Shops. The three bus garages are located at 69th Street, 77th Street and 103rd Street. CTA's Beverly garage was closed down when a new 103rd street facility opened in 1988. Buses which formerly operated out of the Beverly garage now operate out of 103rd Street. A new garage is expected to be constructed at 74th and Wood Streets at a cost of almost \$50 million to replace the 69th Street garage.

With regards to rolling stock, CTA is currently accepting delivery of nearly 1,000 new wheelchair-accessible buses at a total cost of about \$200 million. A significant number of these new buses are being scheduled out of these south side garages.

#### *3.2.1.6 Metra Improvements*

Metra undertakes a maintenance program of its rail and related structures which results in the routine replacement of rail to maintain operating standards. No significant investment in track is expected beyond this regular maintenance schedule in the Study Area. Metra is also undertaking a bridge renewal program consistent with the recommendations of its bridge assessment study.

Metra maintains 23 rail yards in its system, seven of which serve as major repair and maintenance facilities. Four of these seven major repair facilities are located within the Study Area, and two of them, the 16th Street Weldon yard and the Woodcrest facility, service the Electric fleet. Metra has plans to substantially rehabilitate one of these major repair facilities, the 16th Street Weldon yard and one of its storage yards, the 124th Street KYD yard, over the next few years. The 124th Street KYD yard is being upgraded to a major repair facility for the Electric fleet at a cost of more than \$20 million as Metra prepares to vacate the Woodcrest facility (which is currently leased by Metra).

With regard to Metra station improvements in the Study Area, the downtown Randolph Street station has undergone a total of \$8 million in improvements recently, with \$3 million attributed to the Electric portion of the station area. The Electric's Van Buren Street station rehabilitation project is also underway at a cost of about \$11 million.

Looking at non-downtown stations, reconstruction or major improvements have been completed at the Richton Park, Harvey, 211th, Calumet, and Flossmoor stations on the Electric line. Construction is currently underway at Olympia Fields and Matteson. Planning and engineering studies are underway for improving the Electric's Ivanhoe station. With regards to parking facilities on the Electric line, 116 new spaces and 139 rehabilitated spaces are expected to be completed at the Riverdale station by the end of the year. In addition, plans call for the construction of 84 new spaces at the Kensington/115th Street station and 87 new and 289 rehabilitated spaces at the Ivanhoe station.

Metra is planning to rehabilitate and/or modify 165 Multiple Unit cars which are used exclusively on the Electric line at a total cost of nearly \$110 million. Accessibility features are included in this rehabilitation.

### 3.2.2 Planned Improvements

The City of Chicago hopes to proceed to preliminary engineering later this year on a new distributor system for the Chicago Central Area. The full-build light rail alternative, the system with the highest capital cost, is currently estimated to cost more than \$700 million (\$590 million in 1990 dollars).

#### 3.2.2.1 Central Area Circulator

The proposed Central Area Circulator (CAC) project involves the development of a new downtown transit system to meet the mobility needs of the growing Chicago Central Area. The Central Area service district, as defined by the special service taxing district established to generate a share of the project's capital costs, is bounded by: Oak Street on the north; LaSalle, Des Plaines and State Streets on the west; the Stevenson Expressway on the south; and the lake on the east.

The CAC project is being managed by the City of Chicago, which is now concluding the formal Alternatives Analysis/Draft Environmental Impact Statement process. Four alternatives are currently under consideration. One alternative under consideration is the establishment of an expanded bus service network, while the other three alternatives involve the development of light rail transit service in one, two or three Central Area corridors. Final alignments have not been determined in this alternatives analysis stage. The expected impact of the CAC project on the South Corridor would be increased downtown distribution for radial transit lines and possible increased transit service provided by the south leg of the CAC project by additional bus service or light rail transit service extending to McCormick Place via the Metra Electric right-of-way or Michigan and Indiana Avenues.

The City of Chicago is planning a public hearing on the CAC Alternatives Analysis/Draft Environmental Impact Statement in September 1991. This would be followed by preliminary engineering, which is scheduled to begin around the end of the year. The CAC would be owned by the City of Chicago and governed by a nine member Board of Directors consisting of public and private sector representatives. Operation of the system has yet to be determined.

#### 3.2.2.2 Highway Improvements

##### Programmed Highway Projects

The projects that are identified in the region's Transportation Improvement Program (FY91 Annual Element and FY92-95 Multi-Year Program) that involve new construction, capacity increases (additional lanes) or related to transit that are located in the Study Area include:

##### **FY91 Annual Element**

- Transit facility access improvements for Metra Electric Stations in Riverdale, Matteson, East Hazel Crest, Richton Park, and Homewood
- Add lanes to Sauk Trail Road from IL 1 to Cottage Grove Avenue
- Add lanes to Dolton/State from I-94 to state line

##### **FY92-95 Multi-Year Program**

- Construction of South Loop Connector from Cermak to Harrison
- New construction for Pershing/Oakwood from Cottage Grove to ICG Railroad
- Add lanes to Dolton/State from Torrence to state line
- Add lanes to 147th Street from Cicero Avenue to Oak Park Avenue
- Add lanes to 183rd Street from Cicero Avenue to Crawford Avenue

### Planned Highway Projects

A strategic regional arterial system has been proposed in the region's 2010 Transportation System Development Plan to supplement the freeway system from a traffic and funding perspective. The level of improvements associated with strategic regional arterials will vary with their location, ranging from the removal of bottlenecks to preservation of right-of-way. However, the road designs for all strategic regional arterials will consider the needs of public transit. Strategic regional arterials that have been designated in the Study Area include:

- 127th/130th Street from IL 83 to Torrence Avenue
- 55th Street from I-55 to Morgan Drive
- 87th Street from IL 50 to I-94
- IL 394 from Calumet Expressway to IL 1
- Lake Shore Drive from Hollywood Avenue to Cornell Drive @ 57th Street
- Pershing Road from Archer Avenue to I-94
- Stony Island Avenue from 67th Street to I-94
- Torrence Avenue from US 12/20 to I-80/94
- US 6 from IL 7 to Torrence Avenue
- US 12/20 from US 45 to Cook-Indiana line
- US 30 (Lincoln Highway) from Cook-Will line to Cook-Indiana line
- Western Avenue from US 14 to Dixie Highway/ U.S. 30

#### *3.2.2.3 Other Proposed Transit Projects*

Three major transit projects, which would impact the Study Area, have been proposed in the region's long range transportation plan.

### Cicero Avenue O'Hare/Ryan Interline Connector

The Cicero Avenue O'Hare/Ryan Interline Connector (Mid-City Transitway) project is a 22 mile circumferential transit line that would connect the O'Hare rapid transit line at the Jefferson Park or Montrose station with the Dan Ryan rapid transit line at the 87th Street station. This L-shaped corridor would provide connections to the five commuter rail lines and four rapid transit lines (including the new Southwest line) that it would intersect. This project is identified in the region's 2010 Transportation System Development Plan as a Major Facility Priority Project, which are considered the most promising projects for system expansion. The feasibility of the Mid-City Transitway project is currently being studied by the Chicago Department of Public Works.

### EJ&E Circumferential

The Elgin, Joliet & Eastern (EJ&E) or Outer Circumferential Corridor project is a 105 mile circumferential transit line between Waukegan and Lansing. This project is identified in the region's 2010 Transportation System Development Plan as a Corridor of the Future. Corridors of the Future are recommended for consideration within the time frame of the plan and for preservation of right-of-way for possible use beyond 2010. The EJ&E line would use the Elgin, Joliet & Eastern railroad alignment, which is a semi-circular shaped corridor about 35 miles out from downtown Chicago, that would connect with nine radial commuter rail lines. The EJ&E Circumferential line is also included as an element of Metra's Rail Alternatives Planning Study and is currently under study.



## Union Pacific/CSX to Crete

The Union Pacific/CSX project is a 32 mile radial transit line between Crete and downtown Chicago. This project is identified in the region's 2010 Transportation System Development Plan as a Corridor of the Future. The Union Pacific/CSX line would use the UP/CSX railroad alignment and other existing trackage to either LaSalle Street Station or Union Station in the Chicago Central Area. The Union Pacific/CSX line will also be included as an element of Metra's Rail Alternatives Planning Study.

### **3.2.3. Anticipated Changes in Service Quality**

**By 2010, service quality changes will have occurred as a result of additions to the Study Area transit system, including construction of the Howard-Dan Ryan Connector, the downtown circulator, the Southwest transit line, and Roosevelt Road Station. These service changes will result in changes in service quality, especially for riders of the Dan Ryan and Englewood/Jackson Park Lines, though some impact might occur on other services as well.**

Travel times to destinations in the Loop will improve for Dan Ryan riders, though only slightly, as a result of the Howard-Dan Ryan Connector. Based on preliminary operating plans for the Howard-Dan Ryan route, travel from 95th Street on the Dan Ryan line to Madison Street in the Loop will improve from 27.5 minutes to 26 minutes, as Dan Ryan trains are able to take advantage of somewhat higher operating speeds in the State Street subway. The Englewood/Jackson Park Line will experience a slowing of trip times, with running time from Ashland changing from 30 to 31.5 minutes after the Howard-Dan Ryan Connector. However, planned improvements to the track and structure for the Englewood/Jackson Park Line would improve these travel times. Dan Ryan riders who use the four current skip-stop stations will experience improved service frequencies with their conversion to all-stop stations<sup>17</sup>.

Riders on other services, such as Metra Electric and express Routes 6 and 14, will experience travel time improvements resulting from construction of the Central Area Circulator. With the Circulator, travel times will improve by about five minutes from the Loop termini of both lines to the Near North area just north of the Chicago River.

The number of transfers required will also be reduced for many rapid transit riders after the Howard-Dan Ryan Connector is implemented. Dan Ryan riders will no longer need to make an inconvenient transfer to the State Street subway when travelling to north of the Chicago River. However, this gain for Dan Ryan riders will be offset by the loss of easy access to the Near North area for some riders living within walking distance of an Englewood/Jackson Park station who will require an additional transfer, either involving bus access to the Dan Ryan, or a relatively inconvenient transfer at the new Roosevelt Road or State/Lake Stations. Dan Ryan riders with destinations in the western part of the central area may have one additional transfer, while Englewood/Jackson Park riders with western destinations may have one less transfer.

With the Howard-Dan Ryan Connector improving Dan Ryan access to the growing Near-North area of downtown Chicago and the addition of a station at Roosevelt improving access to the Near South, significant ridership gains are expected after the Connector's opening. The CTA's

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<sup>17</sup> 63rd, Garfield, 47th, and Cermak.

service plan will increase peak-period service somewhat on the Dan Ryan Line when the Connector opens. As a result, heavier passenger loads on Dan Ryan trains are expected. Currently Dan Ryan trains are operating with lower peak period loads than Howard trains.<sup>18</sup> Whether the Dan Ryan ridership gains result in overcrowding is uncertain. CTA's ongoing service planning process changes rail car assignments in response to changing usage patterns. It is expected that this process will result in continued adjustments to Howard-Dan Ryan service levels.

### 3.3. FUTURE RIDERSHIP ON RADIAL SERVICES

In the near term, it is anticipated that the South Corridor will see a significant ridership shift in the wake of the Howard-Dan Ryan Connector's completion. This shift will produce a net increase of Study Area transit ridership, as ridership gains on the Dan Ryan exceed losses on the Englewood/Jackson Park. In the long term, changes in Study Area demographics and travel patterns will also stimulate ridership growth.

#### *3.3.1. Ridership After the Howard-Dan Ryan Connector*

The implementation of the Howard-Dan Ryan Connector is projected to cause significant changes to ridership patterns on the Study Area transit system, consisting of three components:

- Significantly more Study Area residents are expected to use the Dan Ryan to travel to areas north of the Loop.
- The Howard-Dan Ryan Connector is projected to decrease Dan Ryan travel time from the South Corridor to the Loop. Travel time on the Englewood/Jackson Park Line will increase somewhat, causing a slight shift in downtown ridership to the Dan Ryan.
- The Connector will shift the Roosevelt and Harrison subway stations from the Englewood/Jackson Park to the Dan Ryan line, allowing Dan Ryan riders to reach the projected growth area south of the Loop. A new elevated station will be constructed at Roosevelt to serve the Englewood/Jackson Park and Southwest lines.

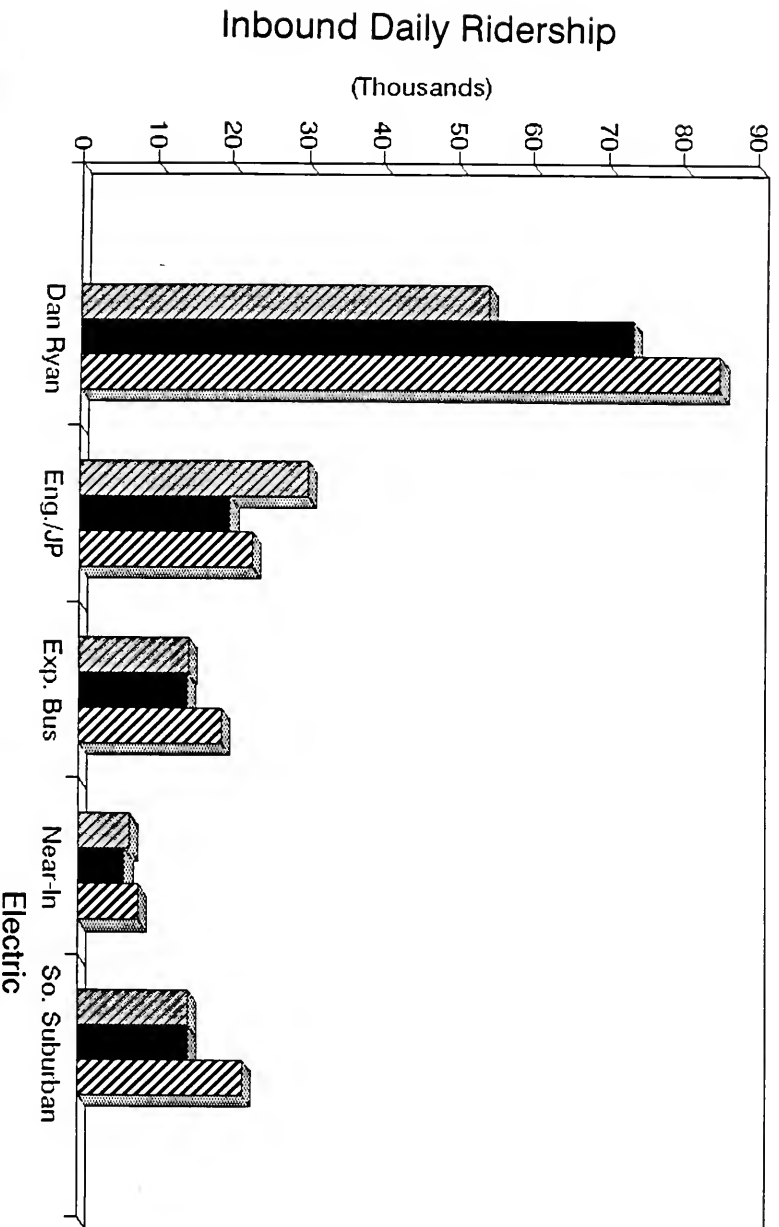
Englewood/Jackson Park ridership is expected to decline by 34 percent, while an increase of 36 percent is expected to occur on the Dan Ryan Line (see Exhibit 3-3). These ridership changes do not offset each other, since some new Dan Ryan ridership is likely to occur at the expense of private automobile, Metra Electric and local bus patronage.

The Englewood/Jackson Park Line is projected to decline in ridership most markedly on the trunk and on the Englewood Branch, where a 40 percent decline is expected. The Jackson Park branch will experience a less marked 20 percent decline. The smaller decline on the Jackson Park Branch derives not so much from reduced impact of the Connector but from the

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<sup>18</sup> Fall, 1990 Dan Ryan peak period loads were AM-88% and PM-79% of design capacity, compared to Howard loads of AM-100% and PM-92%.

# South Corridor Ridership Projections



1988 Actual

1988 with Ho/Dan

2010 Base Scen.

strengthening effect of adding two stations, a re-opened Cottage Grove and construction of the new Dorchester station.

### *3.3.2. Year 2010 Ridership*

By 2010, total ridership on the four major South Corridor services is expected to increase in all three scenarios (see Exhibit 3-4). In the base scenario, ridership increases by 35 percent over the 1988 base year, or 42,000 riders.<sup>19</sup> In the pessimistic scenario, ridership grows by 18 percent or 21,400 riders while, in the optimistic scenario, it jumps 49 percent, or 58,200 riders

The Dan Ryan Line will gain the most riders in all three scenarios, both in absolute and relative terms. In the base case, ridership increases 57 percent over 1988, or by 30,700 riders. Of these, 19,300 can be attributed to the Howard-Dan Ryan Connector, while the remainder is due to population and employment growth. In the pessimistic case, ridership grows at slower rate than the base case, rising 36 percent, while in the optimistic scenario the total increase is 72 percent.

By 2010, the Englewood/Jackson Park Line will lose more riders than any other of the Study Area transit services, under all three scenarios. In the base scenario, ridership in 2010 would be 76 percent of that in 1988, a loss totalling almost 7,400 riders. However, the line's ridership losses are expected to occur following the completion of the Howard-Dan Ryan Connector, when a decline of 11,300 passengers is projected. After that, 3,900 of the lost daily ridership is expected to be restored by 2010. Moreover, ridership losses on the line are expected to concentrate on the trunk portion and on the Englewood branch, while the Jackson Park branch is expected to show some growth as a result of the addition of two stations -- Cottage Grove and Dorchester. In the optimistic scenario, the total ridership will be about 82 percent of 1988, while in the pessimistic scenario, ridership will be only 64 percent.

The Metra Electric service is expected to gain ridership in most 2010 scenarios. Both the optimistic and the base scenarios predict Near-In service to gain ridership, by 19 percent and 6 percent respectively, while the pessimistic scenario predicts 7 percent decline from 1989 ridership levels (1989 ridership reflects an increase over the 1987 base year included in the ridership model). For suburban service, solid growth is also expected by 2010, with 39 percent increase forecast by the base case, and 52 and 22 percent growth forecast for the optimistic and pessimistic scenarios.

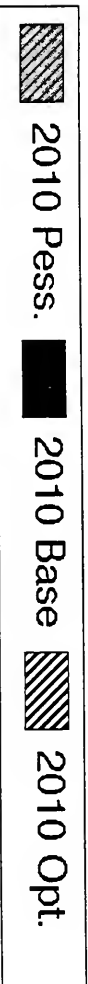
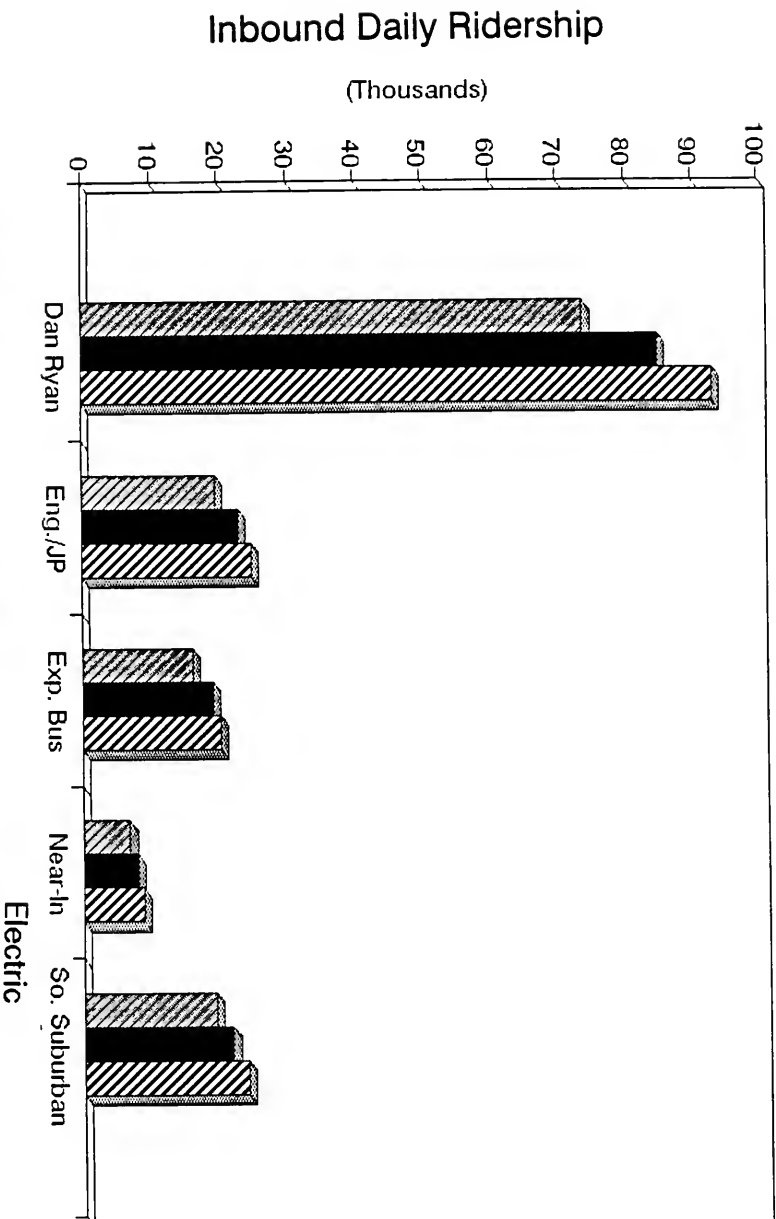
Express Bus service also shows increases in all scenarios. The base case forecasts growth of 31 percent, roughly equal to the total transit ridership growth expected to occur in the South Corridor. The ridership in the pessimistic case increases 11 percent, while in the optimistic case it increases 40 percent.

Because each of the Study Area transit services is projected to experience different rates of growth, by 2010, their relative shares of the total transit market will have shifted. Under the base case, the Dan Ryan will increase its market share from about 45 percent to 54 percent. Metra Near-In's share is projected to decline, from 5.5 percent of the total to 5.0 percent, while Metra suburban will gain market share, increasing from 12 percent to 16 percent. Express bus market share is expected to remain flat, at 12 percent.

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<sup>19</sup> The ridership model uses a 1988 base year, 1987 for the Electric. Comparing 2010 base case ridership forecasts to 1989, total ridership increases 29% or 36,000 riders.

# South Corridor 2010 Ridership Scenarios



### **3.4. IMPACTS OF TRANSIT IMPROVEMENTS ON FUTURE PERFORMANCE**

In both the near-term and in 2010, operating productivity will be influenced by transit ridership levels and the supply of service available. Though estimates exist for both ridership and service supply immediately following completion of the Howard-Dan Ryan Connector, a service plan for 2010 does not exist. Given the constraints on information available, only immediately post-Connector productivity can therefore be estimated. These estimates indicate mixed potential for improvements to Englewood/Jackson Park productivity.

#### ***3.4.1 Post Howard-Dan Ryan Connector Productivity***

After the Howard-Dan Ryan Connector's completion, Dan Ryan ridership will increase, resulting in a 14 percent increase in productivity when measured by car miles, and a 16 percent increase by train miles and assuming no headway changes (see Exhibit 3-5). These increases, however, may be constrained by the need to add capacity in the peak hours, which would reduce productivity by adding car miles and train miles.

On the Englewood/Jackson Park, the new pairing will allow service on the Englewood/Jackson Park Line to be reduced which, in conjunction with the loss of access to the North Side of Chicago, will cause ridership to decline. The net effect of service reduction and ridership decline will be to slightly increase productivity by some measures, but reduce it by other measures.

Using ridership estimates created for the South Corridor Study, and service level estimates provided by the CTA, several measures of post Connector productivity were created. The results of the analysis indicate that the productivity on the Englewood/Jackson Park Line will increase by about 9 percent using the car-mile measure and decrease by 18 percent using the train-mile measure. The new productivity measures would remain below the current system-wide average, by more than 13 percent measured per car-mile and by more than 28 percent measured per train-mile. Since increases in productivity resulting from the Howard-Dan Ryan Connector are likely to improve the system-wide average, this analysis may understate the degree to which the Englewood/Jackson Park would fall below the system-wide average.

#### ***3.4.2 Year 2010 Productivity***

In the year 2010, the growing employment role of downtown and some population growth in the Study Area are together projected to boost ridership and productivity on all South Side services. This factor causes ridership growth on the Englewood/Jackson Park Line but not to a degree sufficient to compensate for the shift to the Dan Ryan caused by the Howard-Dan Ryan Connector. Even in the optimistic scenario studied, ridership is nearly 20 percent below current levels on the Englewood/Jackson Park Line. In any of the three scenarios for the year 2010 studied, the Englewood/Jackson Park Line would be a poor performer in relative terms. Because service levels in 2010 are unknown at this time, no attempt was made to estimate cost productivity measures.

**ESTIMATED PRODUCTIVITY  
AFTER HOWARD DAN RYAN CONNECTOR**

	Current Pass/Car-Mi. pre-Ho-Dan	Change in Car-Miles w/Ho-Dan*	Estimated Ho-Dan Ridership Impact**	Estimated Pass/Car-Mi. post-Ho-Dan	% Change
Dan Ryan	4.76	119.2%	136%	5.43	14%
Englewood/ Jackson Park	2.58	60.3%	66%	2.82	9%
Rail Average	3.26				

	Current Pass/Train-Mi. pre-Ho-Dan	Change in Train-Miles w/Ho-Dan*	Estimated Ho-Dan Ridership Impact**	Estimated Pass/Train-Mi. post-Ho-Dan	% Change
Dan Ryan	23.96	117.5%	136%	27.4	16%
Englewood/ Jackson Park	13.57	80.2%	66%	11.17	-18%
Rail Average	15.65				

\* Based on CTA 1989 Plan (see below)

\*\* Also includes effect of Cottage Grove and Dorchester Stations

<u>CURRENT</u>	<u>Car-Miles</u>	<u>Train-Miles</u>
	1989	
Englewood/Jackson Park-Howard	50,752	9,670
Dan Ryan-Lake	45,413	8,932
Total	96,165	18,602
 <u>POST HO-DAN</u>	 <u>PLAN</u>	 <u>PLAN</u>
Englewood/Jackson Park-Lake	30,628	7,752
Dan Ryan-Howard	54,120	10,494
Total	84,748	18,246

Ridership gains on the Dan Ryan Line will eventually require capacity expansion in order to be sustained. One method of increasing capacity would be to decrease headways. In order to achieve current load standards, peak Dan Ryan headways must be reduced from an average of 3.9 minutes currently to approximately 2.8 minutes by 2010. Capacity could also be increased by increasing average train length; however, this strategy would be constrained by the need to construct longer platforms at some stations to accommodate new train lengths.



## 4. EVALUATION CONCLUSIONS

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Phase I of the South Corridor Study provided a comprehensive analysis of the strengths and deficiencies of the existing transit system. The evaluation examined the corridor transit services in the present and in the future, taking into account already programmed and proposed transit improvements. Evaluation findings have been documented in the previous sections describing current and future conditions. As a result, several conclusions can be drawn regarding the major strengths and weaknesses of each of the four major radial services in the corridor and implications for the corridor transit system as a whole. These conclusions are summarized in this section.

### 4.1. IMPLICATIONS FOR THE CORRIDOR'S TRANSIT SYSTEM

The existing transit network provides the Study Area with extensive radial transit service and considerable consumer choice. The transit network has remained largely unchanged since 1970 while the Study Area itself has undergone significant change in the last twenty to thirty years as the center of population shifted dramatically southward. The population of the Chicago portion of the Study Area, where most of the transit service is provided, has declined steadily with the largest losses occurring in the past decade. Population is projected to rebound somewhat by 2010 although these projections were made before the significant decline in population in the 1980's was known.

Ridership on some services has declined with the declining population while other services have shown surprising stability or growth as the market diminished. In the near future, the completion of the Howard-Dan Ryan Connector will further strengthen the attractiveness of the Dan Ryan Line, largely at the expense of the Englewood/Jackson Park Line. Over the longer term, growth in downtown employment and population growth in much of the Study Area is expected to result in increased ridership on most services.

#### Metra Electric

The Metra Electric services carry about one in five South Corridor radial riders. Metra Electric service is fast and comfortable and was rated highly in most service categories by both users and non-users. The line's major disadvantage is poor downtown distribution. While all rider groups share perceptions of the Electric, other conclusions differ markedly between the Near-In and Far South areas served by the Electric.

Far South service riders make up over two-thirds of Metra Electric riders, and their trains are well utilized and achieve productivities well above Metra system-wide averages. There is little overlap in catchment area with adjacent services, such as the Rock Island. Suburban ridership is expected to grow by almost 40 percent by the year 2010. Increased parking capacity at south suburban stations will be required to accommodate expected ridership growth. Metra has an on-going program to monitor parking demand and to identify opportunities for parking expansion as needed.

In the Near-In area the line's major disadvantages lie in its lower frequencies and poor downtown distribution. The Metra Electric also has the disadvantage of relatively high fares, which results from both premium ticket prices compared with the CTA and from lack of fare integration with the CTA, making transfers from Metra expensive. Near-In service is provided primarily by trains operated on the Blue Island and South Chicago Branches. These two

services have very different performance characteristics. The South Chicago Branch carries nearly three times as many riders as the Blue Island, and achieves higher market share in its service area. The South Chicago Branch also achieves good productivities, despite its short trains, because of its unusually high load factors for commuter rail service. Cost per passenger is lower than other Metra services, in part due to its shorter trip lengths. South Chicago ridership is expected to show some increases by 2010, growing by 17 percent.

Blue Island trains, which serve the branch and mainline stations from 63rd to 111th Streets, have extremely low ridership. These stations attract some of the lowest ridership on the Metra system, while most riders originate at a few stations at the end of the Branch. Only a small fraction of riders within its service area uses the Blue Island line; instead the vast majority use the Dan Ryan. Productivity on the Blue Island service is below the system average and cost per rider is estimated to be about 70 percent higher than Metra system-wide costs. Load factors are average and off-peak service is particularly underutilized. Blue Island ridership is expected to sustain little growth between now and 2010, increasing by eight percent.

### Dan Ryan Line

The Dan Ryan Line is clearly the predominant transit mode in much of the city portion of the Study Area. It carries nearly half of all South Corridor travelers using any of the four services studied. Ridership levels at stations north of 63rd Street are about average for CTA rapid transit, while ridership from stations below 63rd Street is very high, with 95th Street representing the highest volume station on the CTA system.

Among the line's strengths are its high frequency, high speed, highway-median operation, and minimal environmental impact. Access to most downtown destinations is good, with the exception of the southwest part of the Chicago Central Area and the Near North. The Dan Ryan also has above average performance in terms of load factor, productivity and cost per passenger.

The line's weaknesses lie mainly in the high proportion of riders who must transfer, particularly those with destinations outside of the Loop, where multiple transfers may be required. Trips to the densely developed Near North can be made on the Dan Ryan only with an inconvenient transfer. Currently, the line has no stations between Cermak Road and Adams Street, making trips to the developing Near South difficult. In the Study Area, station spacing is fairly long and walk access is made inconvenient by the need to cross a major highway and abutting non-residential areas. Overcrowding of peak period trains has been a weakness in the past, but is not currently a problem.

By the year 2010, the Dan Ryan Line is projected to experience an approximately 50 percent increase in ridership, resulting from a variety of factors. Increased Central Area employment and increased highway congestion will serve to boost ridership, as will the creation of the Dan Ryan - Howard Connector. The Connector will enable the Dan Ryan to serve trips to the North and Near North without a transfer in the loop, provide access to the Near South, and also slightly reduce travel time to the loop itself. By connecting the Dan Ryan to the high volume Howard Line, the CTA can allocate its rolling stock more efficiently.

### Englewood/Jackson Park Line

The Englewood/Jackson Park Line carries nearly one-quarter of the Study Area trips on the four major radial transit services in the corridor, and plays a major role in serving the communities through which it passes.

The main strength of the Englewood/Jackson Park line lies in its ability to accommodate trips to and from many locations without requiring a transfer. Close station spacing in the Study Area and the proximity of stations to riders' homes and businesses make walk access more convenient and common than on the Dan Ryan. Central Area stations include several in the Loop, a station in the developing Near South area, and three stations in the densely developed Near North. North of downtown, the line connects to the Howard Line, which attracts a significant share of Englewood/Jackson Park Line destinations. Service on the line is frequent (although less so on the branches), trains are relatively uncrowded, and the relatively few transfers required tends to reduce average fares. The line also has stations centrally located in communities with the highest percentage of transit dependent residents.

The Englewood/Jackson Park Line's weaknesses lie in its lower productivity. A number of stations on the line rank very low in ridership when compared to the rest of the CTA system. Load factors and productivities on the Englewood/Jackson Park Line are below CTA rail system-wide averages and cost per rider is nearly twice the system-wide average. Within its service area, it carries fewer riders than the Dan Ryan Line. Nevertheless, at the stations on the parallel segments between 63rd and 35th Streets, the Englewood/Jackson Park carries more riders than the Dan Ryan Line in total, although less on a per station basis. Other weaknesses include its slower operating speed due to station spacing and the noise and negative visual impacts associated with elevated structures, as well as the line's advanced age.

With the implementation of the Howard-Dan Ryan Connector, Englewood/Jackson Park ridership is projected to decrease. The Connector will transfer a key advantage of the Englewood/Jackson Park to the Dan Ryan -- service to the North Side and Near North. While the connection of the Englewood/Jackson Park Line to the Lake Line and of the Dan Ryan Line to the Howard Line makes for a more efficient CTA operation, it is expected to reduce ridership on the Englewood/Jackson Park, a significant portion of which uses the line for access to the north. After the initial, negative impact of the Howard-Dan Ryan Connector, ridership on the Englewood/Jackson Park is expected to grow by 2010. Nevertheless, 2010 ridership on the Englewood/Jackson Park line is projected to remain below 1988 levels, while ridership on other South Corridor services grows.

The poorer productivity of the Englewood/Jackson Park Line may also be due to an overlap between portions of the service areas of the Dan Ryan and Englewood/Jackson Park Lines. This would only apply to radial downtown Chicago travel markets, which both lines serve.

### Express Bus

The South Lake Shore Drive Express Bus service carries about 12 percent of the Study Area trips on the four major radial transit services in the corridor. It achieves better productivities and its per-rider costs are about half of those of the Englewood/Jackson Park. Within its service area, the express bus, like the Dan Ryan, captures about two thirds of riders using the four radial services. One major strength of the express bus service is the high level of service

provided through very short headways and frequent stops in the Study Area. In fact, express bus riders rate CTA service as high or higher than their CTA rail counterparts.

A weakness of the South Lake Shore Drive Express Bus service is found in its lack of access to areas north of the Loop. Also, while its cost per rider is less than the Englewood/Jackson Park's, it is much higher than the Dan Ryan line's, as well as many other CTA bus routes. In the future, the South Lake Shore Express Bus service is expected to maintain its share of total South Corridor riders. However, if traffic congestion significantly worsens over the next twenty years, this could have a negative impact on express bus ridership and reliability.

## **4.2. NEXT STEPS**

The results of the Phase I evaluation of services will be used to guide the development of future alternative service configurations for analysis in Phase II. A number of alternatives will be identified that could provide improved cost-effective transit service for corridor residents. In particular, alternative configurations should address the following issues identified in Phase I:

- Overlapping catchment areas of most services
- Poor service to some Central Area destinations on some services
- Limited catchment area of the Near-In Metra Electric Line
- Electric Near-In's low market share in areas near its stations and low usage despite high perceived service quality
- Low productivity on Metra Electric Blue Island service
- Low productivity on Englewood/Jackson Park Line
- Capacity of the Dan Ryan Line to serve increasing demand

The Phase I evaluation of Metra Electric south suburban service has uncovered few problems which require analysis in Phase II of the Study. The primary problem, adequate parking capacity, is being addressed by ongoing Metra efforts. The Phase II objectives of this Study would be best served by narrowing its geographic focus to the areas with overlapping transit markets. A new southern Study Area boundary at Sibley Blvd. or 159th St. would include the market areas of the Electric Blue Island Branch and other corridor services.

In Phase II of the Study, the analysis of the alternative future configurations will build on the ridership analysis conducted in Phase I, which was limited to the base configuration. Various alternatives will then be evaluated using many of the evaluation criteria outlined in Section 1 in order to assess their social impacts, productivity, cost-effectiveness, and financial feasibility. This information can then be used as a basis for making the major capital investment decisions necessary for the maintenance of effective and high quality public transportation services in the corridor.



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